

Extending the Concept of Value Chain Governance: An Institutional Perspective

Comparative Case Studies from Dairy Value Chains in Indonesia

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God provides help in His time

Soli Deo Gloria

Abstract

Value Chain (VC) approach has been widely applied in developing countries to promote economic growth particularly of micro, small and medium enterprises (MSMEs) and rural producers. Many cases have shown that VC upgrading is strongly determined by the prevailing governance structure. However, hitherto the discussion on VC governance has been limited mainly on coordination, regulation, technology, and power; whereas socio-cultural aspects, albeit influential in determining individual behaviour, are mentioned en passant or totally neglected. Thus, this study calls for the extension of governance concept by introducing a wider institutional perspective incorporating regulative, normative, and cultural-cognitive elements to portray a more realistic picture of the interaction between VC operators. Then, it applies the extended concept in case studies of dairy VCs in Indonesia, comparing the governance of successful and unsuccessful upgrading cases. Using an exploratory procedure, data were collected from observations, interviews, and author's own experiences involved in a practical VC promotion project. The causalities between VC governance and upgrading are explained using the qualitative approach of Macro-Micro Model to accentuate the role of VC operators, their perception, and selected action in the upgrading processes. The results show that regulations and their effective enforcement are necessary; but also social relations, values, and norms, as well as orientation, common practices, and habit exert strong influences on determining the behaviour of and thus the interdependency between VC operators. Hence, further VC researches in similar context, i.e. rural areas where socio-cultural aspects are more influential, are to systematically integrate the extended concept of governance into the analysis in order to generate explanation, prediction, and technical recommendation on the facilitation of upgrading processes.

Keywords: value chain, governance, upgrading, development cooperation, institution, methodological individualism, socio-cultural factors, subsistence.

Abstrakt

In vielen Entwicklungsländern findet Wertschöpfungskettenansatz (WSK-Ansatz) verbreitete Anwendung zur Wirtschaftsförderung von Kleinst-, Klein-, und Mittelunternehmen sowie ländlichen Produzenten. Viele Studien belegten, dass WSK-Upgrading von der vorherrschenden WSK-Governance stark abhängt. Jedoch beschränkten sich Diskussionen über WSK-Governance bisher auf Themen wie Koordinierung, Regulierung, Technologie, und Macht. Soziokulturelle Aspekte, die auf das individuelle Verhalten starke Einflüsse ausüben, wurde en passant erwähnt bzw. vollständig ignoriert. Aus diesem Grunde erweitert diese Studie das Governancekonzept durch die Einbeziehung institutioneller Perspektive, die regulative, normative, und kulturell-kognitive Elemente beinhaltet. Diese Erweiterung wird in den Fallstudien von Milch-WSK in Indonesien angewendet. Dabei wird die WSK mit erfolgreichen und erfolglosen Upgradingsresultaten verglichen. Mit einer explorativen Vorgehensweise werden Daten durch Beobachtungen, Interviews sowie den eigenen praktischen Erfahrungen in einem WSK-Förderungsprojekt gesammelt. Die Kausalität zwischen WSK-Governance und – Upgrading wird anhand der qualitativen Herangehensweise des Makro-Mikro-Modells erklärt. Dabei werden die Rolle von WSK-Operatoren, ihre Wahrnehmung, und ihr Entscheidungsverhalten in dem Upgradingsprozess akzentuiert. Die Ergebnisse zeigen dass Regulierung und ihre effektive Durchsetzung von entscheidender Bedeutung sind. Parallel dazu haben aber gesellschaftliche Beziehungen, Werte, und Normen sowie Orientierung und Gewohnheit besonders starke Einflussnahme auf das individuelle Verhalten und somit die Interdependenz zwischen WSK-Operatoren. Deswegen sollen weitere Studien in ähnlichem Kontext, nämlich im ländlichen Raum wo soziokulturelle Aspekte von größerem Belang sind, das erweiterte Governancekonzept in die WSK-Analyse integrieren, um verbesserte Erklärung, Voraussage, und technische Empfehlung über die Förderung der Upgradingsprozesse zu generieren.

Schlagworte: Wertschöpfungskette, Governance, Upgrading, Entwicklungszusammenarbeit, Institution, methodologischer Individualismus, soziokulturelle Faktoren, Subsistenz.

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Abbreviations and Glossary

AI	Artificial insemination
<i>Busep</i>	<i>Bukti Serap</i> or Proof of Absorption: the ratio of imported and locally sourced milk
cfu	Colony forming unit (measurement unit for bacterial contamination)
District / re- gency	The second level of sub-national administrative entity in Indonesia (Indonesian: <i>kabupaten</i>) under a province, headed by a head of district or regent (Indonesian: <i>bupati</i>), and on the same level as municipality / city
DPI(s)	Dairy processing industriy(-ies)
FA	Financial assistance
GDFP	Good dairy farming practices
GKSI	<i>Gabungan Koperasi Susu Indonesia</i> or Union of Indonesian Dairy Cooperatives
GoI	Government of Indonesia
kt	Kilo tonne or thousand tonne ('000 t) or million kg ('000'000 kg)
KUD	<i>Koperasi Unit Desa</i> or Village-Unit Cooperative (VUC)
MCC	Milk collection centre
MSMEs	Micro, Small, and Medium Enterprises
MUI	<i>Majelis Ulama Indonesia</i> or Indonesian Ulama (Muslim Scholar) Council
Municipality / city	The second level of sub-national administrative entity in Indonesia (Indonesian: <i>kota</i>) under a province, headed by a mayor (Indonesian: <i>walikota</i>), and on the same level as district / regency

NIE	New institutional economics
OIE	Old institutional economics
Province / special region	The first level of sub-national administrative entity in Indonesia (Indonesian: <i>propinsi</i>) under the national government, headed by a governor (Indonesian: <i>gubernur</i>)
RCI	Rational choice institutionalism
SCM	Sweetened condensed milk
SE-Asian	South-East Asian
SMP	Skimmed milk powder
SNF	Solid non-fat
SOP	Standard Operating Procedure
Sub-district	The third level of sub-national administrative entity in Indonesia (Indonesian: <i>kecamatan</i>) under a district or municipality, headed by a head of sub-district (Indonesian: <i>camat</i>)
TA	Technical assistance
TPC	Total plate count (method of measuring bacterial contamination)
TS	Total solid
UHT	Ultra high temperature
UIDC	Union of Indonesian Dairy Cooperatives
VCA	Value Chain Approach or Analysis
Village	The lowest sub-national administrative entity in Indonesia (Indonesian: <i>desa</i> or <i>kelurahan</i>) under a sub-district, headed by a village head (Indonesian: <i>kepala desa</i> or <i>lurah</i>)
VUC	Village Unit Cooperative
WMP	Whole milk powder

1 Introduction

Value Chain Approach or Analysis (VCA) has been advancing since the end of the last millennium as one of the most-used methods in analysing economic development (Kaplinsky et al. 2001). The context where VCA has been widely applied was the rising influences of global economy onto, particularly, the economy of developing countries. Several trends characterised this context. First, globalisation does not only provide opportunity for sustainable economic and income growth, but also pose risks and losses upon countries integrated into global economy. Hence, there is a need for an approach designated to analyse and manage the successful insertion into global economy. Second, there is an emerging phenomenon of industrial patterns with intensive vertical coordination that are placed between vertical integration and spot-market relationship. Lead firms need to systematically coordinate their supply chains across borders, transmitting product and process information along the chain to ensure homogeneous product quality – often with increasing complexity – and reliable delivery. This requires a certain degree of control over other firms in the supply chains, yet without aspiring to gain ownership control of them (Altenburg 2006a, p. 498; Altenburg 2006b, pp. 493–494). Third, various process and product standards / certification have been of particular importance in recent years. They even became basic prerequisites of market access in several countries. This condition challenges firms to more intensively manage, coordinate and control their value chains so as to meet the market requirements (Humphrey 2006, pp. 1–6).

Apart from the use in academic researches, VCA has been widely employed in practical field of development cooperation. Development agencies¹ apply VCA in various forms and in combination with other concepts as an instrument in planning / assessing, implementing, and conducting monitoring and evaluation of development projects. Its application primarily aims at the economic promotion of micro, small, and medium enterprises (MSMEs) in developing countries in adherence to MDG's goal to eradicate poverty. A particular feature of VCA is the focus analysis on VC governance which is generally associated with the relationship between

¹ For the list of donor agencies employing VCA see the website of Donor Committee for Enterprise Development, Working Group on Linkages and Value Chains on http://www.value-chains.org/dyn/bds/bdssearch.otherBDSsites?p_lang=en

firms along the value chain – the VC operators. Main issues in VC governance are, inter alia, coordination, communication or transmission of information, distribution of (market) power, and collaboration. But of particular importance is the influence of VC governance in determining VC upgrading, i.e. improvements toward stronger competitiveness and higher value-added.

1.1 Problem statement

The discussion of VC governance and upgrading, however, has been focusing mainly on economic aspects. In his previous research on the application of VCA in development cooperation Nugraha (2007), the author concluded that whether a value chain upgrades itself or develops through external facilitation is not solely a matter of identifying market opportunities and exploiting them through innovations or improved cooperation; but rather, there were particular socio-cultural factors exerting strong influences on the decision making and action of individuals. The ignorance of socio-cultural factors results from the fact that most researchers employing VCA rest upon '*homo oeconomicus*' – neo-classical economics' underlying assumption about human behaviour. The generalisation of such pre-assumption, however, should be put into question. While it may be applicable to VC operators of highly commercialised, globally operating value chains; economic decisions and actions of individuals in rural areas of developing countries – that mainly are predominated by economic activities in agricultural sector – are influentially shaped by the prevailing socio-cultural context. In this respect, socio-cultural factors may hinder or support the development of the value chains. Hence, this situation gives a strong impetus to the identification of socio-cultural elements influencing the behaviour of VC operators and to the explanation of how the behaviour of VC operators, in turn, affects VC upgrading measures.

1.2 Objectives

The main objectives of the research are, first, to extend the existing concept of VC governance by incorporating socio-cultural factors; and, second, to explain the phenomena of different upgrading outcomes based on the extended concept of VC governance. For the first objective, a broader conception of institution is introduced to reveal important socio-cultural elements influencing the economic behaviour of VC operators. For the second objective, the explanation employs the approach of methodological individualism to stress the role of both social structure and individuals in sociological explanation. In order to achieve the objectives, the research particularly attempts to:

- analyse and discuss the general concept of governance and specifically the existing concepts of VC governance advanced by different researchers,
- identify institutional theory appropriate for the integration of socio-cultural factors into the concept of VC governance,
- illuminate how the extended concept of VC governance shapes the perceptions of VC operators as individuals who in turn select particular actions,
- elucidate how the actions of VC operators influence each others in dynamic processes of interdependencies which leads to certain VC performance,
- make recommendations on the extension of the conceptual framework of VCA based on the research results.

1.3 Structure of the book

The next chapter clarifies the definition of VC upgrading and governance. As the concept of governance plays a central role throughout the study, the basic notion and use of the term ‘governance’ in general is first described. Then, the term ‘value chain governance’ is examined in more detail by identifying other terms associated with it and comparing the definitions, emphases as well as typology of VC governance posited by researchers from different academic background.

Chapter 3 presents the research framework. In the first part diverse concepts on institution proposed by scholars from economics, political science, and sociology are briefly reviewed to provide sound basis for the theoretical framework. These contributions are summarised in the omnibus definition of institution advanced by Scott (2008) encompassing the regulative, normative, and cultural-cognitive institutional pillars. The theoretical framework is then operationalised using the analytical framework of methodological individualism, particularly Macro-Micro Model as posited by Coleman (1990) and Esser (1999).

Chapter 4 concerns the research process and design. First, the characteristics of the research are briefly described. The second sub-chapter delineates the model of research process and design applied in the study, justifying the scientific approach taken in the empirical study. The third sub-chapter informs the application of the model in the actual empirical study.

Chapter 5 provides background information about Indonesia and characterises the overall situation of dairy sub-sector in South-East Asia, including the current situation and retrospective development of production, consumption, export and import in the region. A particular emphasis is given on the position of Indonesia on the regional level.

Chapter 6 presents the first part of the value chain analysis, i.e. the analysis of end product and end market. Of particular importance are the segmentation of products and markets and their characteristics, the situation and trend of demand and price, and the influence of international policy.

Chapter 7 deals with the second part of the value chain analysis, namely the analysis of VC operators ranging from input suppliers, dairy farmers, cooperatives, to dairy processing industries (DPIs). The policy environment of Indonesian dairy VC also receives an attention here, since it has influential role in the development of dairy VC in Indonesia.

Chapter 8 describes the dairy VCs to be compared. The three production centres to be examined are categorised into lesser and higher-performing interaction system. These are characterised based on their contrasting end conditions. Considering the complexity of the upgrading issues of interaction system, the chapter closes with a modification of the visual presentation of Macro-Micro Model to enhance the legibility of the model.

Chapters 9 and 10 explain the causal relations between the prevailing governance and economic performance of the observed chain links, namely the interaction system DPIs – cooperatives and cooperatives – dairy farmers. The analysis starts with a brief overview of the historical development of the VC operators. Then, the governance structure of the lesser and higher-performing interaction system is described based on the institutional pillars. The causal relationships between the governance and the performance of the chain link (the macro variables) are explicated based on the subjective perception and selected action of the different categories of VC operators (the micro variables).

Chapter 11 closes the study with the reflection of the research results and the application of the research framework. The last sub-chapter provides a short discussion on the relevance of the study for development cooperation and the recommendation on the extension of the conceptual framework of value chain analysis.

2 Value Chain Upgrading and Governance

This chapter, first, clarifies the definition and typology of VC upgrading. The second sub-chapter examines the term ‘governance’ used in general and the concept behind it. The subsequent sub-chapters specifically discuss the definitions of VC governance as proposed by different researchers. Here, a wide range of other terms associated with VC governance are described. The last part concerns the typologies of VC governance.

2.1 Value chain upgrading

First of all, it is important to clarify the definition of ‘upgrading’. In general, literatures in value chain researches, e.g. Humphrey et al. (2004), Gibbon (2001), and Morris (2001), agreed on the typology of upgrading as defined in Kaplinsky et al. (2001, p. 38) (see Figure 2-1 for illustration):

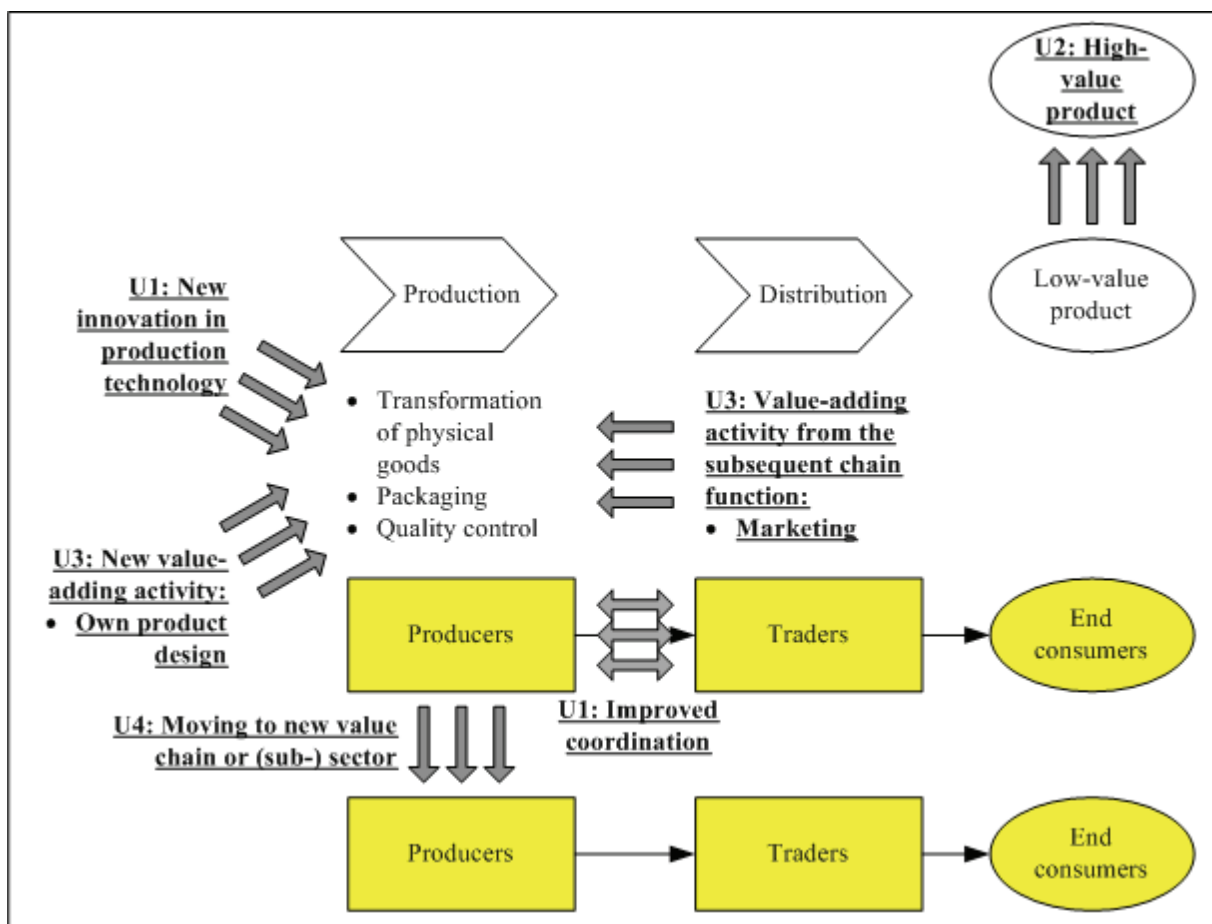


Figure 2-1 Illustration of upgrading typology

Source: own compilation

- i. **Process upgrading (U1):** Enhancing the efficiency of processes and procedures – e.g. of value-adding activities, production organisation, cost efficiency, productivity, and information flow – by, for example, introducing innovative production technology or improving coordination and communication. Process upgrading can take place both within an individual or between chain functions or links.
- ii. **Product upgrading (U2):** Transforming an old product into a new product with higher quality, value, and thus price. For example, vegetable farmers shift the production of conventional vegetables designated for traditional markets unto organic vegetables designated for supermarkets. Product upgrading also includes the introduction of a completely new, more sophisticated product line.
- iii. **Functional upgrading (U3):** Assuming or acquiring value-adding activities from the subsequent or previous chain function. For example, by forming association producers performs a collective marketing, thereby taking over this value-adding activity from the traders. The introduction of new value-adding activities is also regarded as functional upgrading, for example when apparel producers design their own product instead of imitating other products.
- iv. **Chain upgrading or inter-sectoral upgrading¹ (U4):** Moving into another new value chain or (sub-) sector by establishing business linkages with new suppliers and buyers.

Kaplinsky et al. (2001) highlighted the necessity of seeing upgrading as a rent-creating activity and thus upgrading should always stand in comparison to what the competitors or rivals are doing or possessing. Moreover, he also called for a distinction between upgrading as ongoing practices (process oriented) – e.g. improved production design – in comparison to performance output (result oriented) – e.g. lower product cost. Other authors like Humphrey (2006) accentuated the role of flow of information, knowledge transfer, and technical assistance – which can be provided by actors within the chain or outside – as the determinant factor for upgrading; whereas Morris (2001) underlined the role of improved inter-firm relation-

¹ Instead of ‘chain upgrading’ Humphrey et al. (2004) uses the term ‘inter-sectoral upgrading’ for this specific type of upgrading to, perhaps, introduce a more precise term and avoid ambiguity with the generally used term ‘chain upgrading’.

ship or cooperation among them. Despite these minor differences in emphases², value chain upgrading can thus be summarised in a broader definition of:

[...] what the actors in a value chain must do to become more competitive and to generate greater value added in the future. The joint improvement of the value chain by private enterprises and their associations is called “value chain upgrading”. (Springer-Heinze 2007d, p. 2)

2.2 Governance: A widely-used term

In English dictionaries (Walter 2008; Soanes et al. 2005) the word ‘governance’ means

the act or manner of governing, (technical) the activity of governing a country or controlling a company or an organisation; the way in which a country is governed or a company or institution is controlled;

while the word ‘govern’ means

to legally control a country or its people and be responsible for introducing new laws, organizing public services, etc., [often passive] to control or influence somebody / something or how something happens, functions, etc.

These meanings signify that governance does not only cover activities of ruling, coordinating, controlling, constituting rules, etc. but also the manner or the way these are done.

As a scientific term ‘governance’ was not introduced initially in political science but in economics. Coase (1937) suggested that firm organisation – besides market – contributes to the realisation of efficient economic transactions. Both should be further examined comparatively as coordination mechanism. This thought was extended by Williamson (1985) into a research programme. The institutional regulations of firms that are established to reduce transaction costs, namely the directing and administrative structures as well as the vertical and horizontal interaction patterns of the firm, were dubbed ‘governance’. The introduction of governance concept in economics proved that there is a shift of view on economic transactions. Since markets are functioning when certain regulations are in place, the view on economic transaction is shifted from merely exchange mechanism unto institutions, a system of rules. These rules must then be implemented and enforced by a powerful instance, e.g. the state. In sum, the existence of rules and the manner of their enforcement in economic processes is included in the term governance (Benz 2004a, pp. 15–16).

² Cf. Gibbon (2004)

According to Benz (2004b, p. 5) the term governance describes the reality of complex ruling / governing and of collective actions in societies. It should, however, be acknowledged from the outset that – similar to other core terms in social sciences like state, democracy, society – there is no unanimous definition of governance and that this term contains a wide variation of understandings. This term is connected with neither any theoretical concept nor specific research approach, but rather a view on the complex reality. Indeed, governance contains variable meanings, not because of the imprecision of the concept, but rather because of the vast research areas and diverse research objects dealt with (Benz 2004b, pp. 12–13). Various theories can also be applied to approach governance according to research questions to be answered. He, then, concluded that there is no governance theory and no governance theory can exist³.

Nevertheless, the widespread use of this term implies that either there are new aspects need more accentuation (new perception / interpretation of reality) or there are indeed new actual changes of reality that cannot be represented by other, older terms. These new aspects and changes are taking place in not only in society but also in economy, politics; not only in local but also in national and international level; etc. For example, in the field of economy it is acknowledged that markets can fully function provided that they are supported by effective and efficient state regulations and institutionalised negotiation system. There is a growing tendency that processes in different areas of societies and different institutions are interwoven, so that the interdependency between them is increasing (Benz 2004b, pp. 5–14). Against this background the term governance has been gaining popularity: a call for a better understanding in managing these interdependencies.

Despite the varying meanings and understandings behind the term governance there are some constant core meanings that can be identified from different research fields (Benz 2004a, p. 25):

- Governance means to control, coordinate (or also rule) with the purpose to manage the interdependencies among collective actors. Control means the intentional intervention into

³ Benz (2004a) drew this conclusion based on the contributions from various authors compiled in his book regarding governance in diverse fields: local, regional, and global governance; multilevel governance; governance in political economy; etc.

fields of action or the steering of behaviour of actors by inducing changes towards collectively agreed goals. Coordinate means the synchronisation of actions of various actors to reach collective goals. Both terms are in large congruent but emphasise different aspects: control emphasises the intervention of action and the interaction between controlling and controlled actors; whereas coordinate accentuate the interdependency und reciprocity of actions (Benz 2004a, p. 20).

- Controlling and coordination are established on the base of diverse institutional rule systems, usually in combination forms. It should be noticed, however, that institutions can formal or informal, self-enforced or externally-enforced. Therefore, the observation of institutional rule system should also be directed toward abstract, inherent rules in societies that frequently do not receive much attention⁴.
- Governance also covers the interaction pattern and modus of collective actions that result from institutions (network, coalitions, contract agreements, mutual adaptation in competition). The interaction also includes disputes or conflicts due to contradictory, competing interests and how this is settled (e.g. through hierarchy); as well as the mechanism how collective decisions are made.
- Processes of controlling and coordination and interaction patterns cross the traditional organisational borders. Moreover, they exhibit a very dynamic characteristic, namely in constant change (abrupt or incremental) and adjustment process to the rule systems and vice versa. Hence, in theoretical perspective governance refers to the interplay between structures and processes, between institutions and actors, between rule setting and rule enforcement, and so on.

2.3 Value chain governance: Definitions and associated terms

Various authors used the term governance in their value chain researches and studies. Gereffi (1994) was the first to introduce this term and to develop the pioneering concept behind it. This term has been gaining significance ever since:

Most analyses have focused on the dynamics underlying buyer- or producer-driven chains, from the vantage point of the location of the 'lead' firms 'driving' the process and 'governing' global chains usually located in the industrialised countries. (Gereffi 1994, p. 93)

⁴ Cf. Granovetter (2001); Leipold (2006)

Gereffi (1994) showed in his work that globally dispersed yet linked production systems are coordinated by a dominant party (or parties) that determine the overall character of the chain. He emphasised the prevalence of power relation embedded in the value chain. Those firms possessing the power ('lead firms') are taking the role and function of coordinating production system along the chain, determining the division of labour among firms along the chain, setting up or determining rules to be followed, and taking or driving upgrading measures in the value chain. The notion of governance described also implies that the interaction between firms in the value chain is somewhat in repetitive and organized way rather than simply accidental and random⁵.

Humphrey (2006) associated value chain with the existence of lead firms performing vertical chain coordination. These lead firms introduce "modern manufacturing including driving product differentiation and innovation [drive upgrading], a shift from quality control based on inspection and testing towards quality assurance based upon risk management and process controls (...) and just-in-time delivery" (Humphrey 2006, pp. 7–8). Literatures on vertical coordination recognised that the tacit coordination of markets is being replaced increasingly by 'explicit coordination', namely coordination through direct exchanges of information between firms (Altenburg 2006b, pp. 493–494). This coordination is usually referred to as 'value chain governance'. Humphrey (2006) then suggested limiting the term 'value chain governance' to inter-firm relationships, in a manner similar to the use of 'economic governance' by theorists of transaction costs economics; whereas the broader institutional context of the 'rules of the game' for economic transactions where the inter-firm relationships take place should be referred to as 'institutional governance'.

Regarding value chain governance Humphrey (2006) further described it as

the definition and enforcement of instructions relating to what products are to be produced (product design), how they are to be produced (process controls) and when (timing). Setting and enforcement of these instructions need not be carried out by the same firm. (Humphrey 2006, pp. 10–11)

The exertion of governance is possible when, first, the economies of scale in defining and communicating instructions are met and, second, when the instructions are enforced by both

⁵ Cf. Morris (2001, p. 134)

positive and negative sanctions and more importantly, third, when buyers have the capability to impose sanctions on suppliers.

In his article about Agro-Commodity Chains, Gibbon (2001) viewed chain governance and its institutional structures as merely formal organisational framework. The institutional structures here are interpreted not as a broad, comprehensive institutional framework as it is in new institutional economics, but rather ‘rules of the game’ limited only in relation to governance exercised by lead firms (Gibbon 2001, pp. 60–61).

According to Kaplinsky et al. (2001), value chains are governed when “parameters requiring product, process, and logistic qualification are set that have consequences up or down the value chain, encompassing bundles of activities, actors, roles, and functions” (Kaplinsky et al. 2001, p. 134). To ensure these consequences along the chain a certain degree of power is required. Furthermore, Morris (2001) emphasised the contribution of value chain analysis as it

returns us to issues of political economy, foregrounding the organisational and institutional linkages between firms whilst still maintaining the essential nature of competitive market relations. It allows an understanding how firms are locked into dependant relationships across territories through considering issues of cooperation, competition, power, management and control within and between value chains. All these have become subsumed within terms which seem to mean the same thing – governance, ‘lead firms’, ‘buyer-driven’, ‘producer-driven’ – to express what is essentially the governing role of non-market connectedness between firms. (Morris 2001, p. 127)

Similar notion of value chain governance was described by Altenburg (2006b, pp. 493–494) as “process control through non-market mechanisms”. This process control is needed to ensure homogeneous product quality and reliable delivery, which requires the transmission of product and process information and a certain degree of control of other firms in the supply chain. Other reasons are the increasing standard requirements, the increasing complexity of product which calls for simultaneous production planning and tight coordination of different complementary sub-products and services.

2.4 Distinction between value chain governance and coordination

Kaplinsky et al. (2001), however, criticised the mixing up and suggested a clearer differentiation between governance and coordination. He associated governance more with the possession of power in establishing and enforcing rules determining the overall shape of a certain value chain; whereas coordination refers to the management of regular chain activities that can be exercised at several places in the value chain by different actors. Coordinative function is dynamic and changing over time as the division of labour among firms also shifts. This

means that those playing coordinative role are not necessarily governing the chain⁶. For example,

[t]he emergence of full package providers does not mean that this particular value chain is no longer 'buyer driven'. It simply means that the coordination / management role has been concentrated elsewhere in the chain. If the full package provider can incorporate own-branding then this might well constitute a major shift in governance functions. Likewise, in the auto industry, the emergence of modular assembly under the control of multinational first tier suppliers within a 'producer driven chain' simply means that the coordination/management function has been driven down the chain. The governance function which defines the basic operations of the chain is still concentrated within the vehicle assemblers. (Kaplinsky et al. 2001, p. 30)

In further detail Morris (2001, p. 134) described coordination as activities in “managing these parameters [...], monitoring the outcomes, linking the discrete activities between different actors, establishing and managing the relationships between the various actors comprising the links and organising the logistics to maintain networks of a national, regional or global nature”.

2.5 Governance approached from the concept of governance in civil society

Kaplinsky et al. (2001, pp. 29–32) then suggested approaching the concept of governance in value chain by taking the perspective of governance in civil society that encompasses four elements:

- The functions of governance are distinguished in three different powers, namely legislative (setting laws), executive (implementing laws), and judicial (monitoring conformance to laws)⁷, that can be exercised by various parties both internal and external to a particular value chain (see Table 2-1). In fact, it is seldom that these three functions are exercised by a single firm.
- Sanctions both positive and negative (enforcement) are regarded as the key of functioning governance. Positive sanction or reward can be given as a result of compliance with certain requirements in the form of e.g. price incentive or less-demanding audit; whereas negative sanction or punishment in the form e.g. price penalty, exclusion from the value chain or final market.

⁶ Cf. the case study of Saligna furniture value chain in South Africa in Morris (2001, p. 133).

⁷ The separation of powers, also called 'trias politica', was popularized by Montesquieu and is a basic model for the governance of democratic states these days.

- The legitimacy of enforcing reward and sanction over time reflects the popular support in democratic societies. In the case of value chain the trust among firms, particularly of the “governor”, corresponds to this popular support. In value chains characterised by low-trust, the “governor” often changes suppliers to pursue short-term price advantages and immediately gives sanction by excluding those failing to conform to the wishes of the “governor” from the chain. In contrast, in value chains exhibiting high-trust, the “governor” pursues to establish long-term relationships with its suppliers and the failure to meet certain requirements is not immediately sanctioned, but instead the executive governance provides assistance to the non-conforming suppliers so that they can fulfil the requirements.
- The remit of power is mirrored in the depth and pervasiveness of governance. Depth concerns to what extent the rules influence the core activities of individual firms of the chain; whereas pervasiveness refers to how widely over the chain the power is exercised.

Table 2-1 Functions of governance derived from the concept of civil government

Functions of governance	Description	Exercised by parties within the chain	Exercised by parties outside the chain
Legislative	Setting rules / standards / requirements of processes and products	Lead firm (e.g. brand owner, assembly firm in auto industry)	Bodies setting environmental, labour standards, HACCP, etc.
Executive	Implementing rules, ensuring rules are met	Firms managing their supply chain, technical assistance provided to farmers by processing industries or input suppliers	Governmental development projects, technical assistance by development cooperation agencies
Judicial	Monitoring the conformance to the rules	Monitoring by lead firms, exporters, importers, retailers, etc.	Monitoring by NGOs, certification bodies

Source: modified from Nugraha (2007, p. 15)

2.6 Value chain governance: Perspective of industrial organisation theory

Altenburg (2006a) extended the discussion on governance from the perspective of industrial organisation theory. He termed value chains governance as “patterns of industrial organisation which are increasingly placed between spot market exchanges and vertical integration”. Market-intermediated organisations of production are established based on the traditional neo-classic perspective that assumes market mechanisms with its competition to be more cost-efficient than internal supply. With increasing firm size and internal organisational complexity the cost of administrative coordination in a hierarchical organisation may increase substantially.

By contrast, vertically integrated organisations of production are founded on the insight brought by new institutional economics, specifically transaction cost economics. This theory highlights the fact that transactions in competitive markets are not zero. Through market-based transactions firms have less control over the supply chain in comparison to e.g. internal procurement. Hence, this can imperil cost efficient logistics, assurance of product quality and quantity, reliability in delivery, etc. The fact that market transactions contain contingencies which cannot be anticipated beforehand poses other risks, such as incomplete contracts and cost for monitoring and enforcing contracts, to the creation of efficient transaction between firms.

Being in the intermediate position between market mechanism and vertical integration value chain governance seeks to make use of outsourcing in order to reduce cost yet without losing control over production processes. Value chain governance thus can be depicted as “production by order of a lead firm that coordinates its value chain across borders and defines and enforces multiple product and process standards without aspiring to gain ownership control of its suppliers” (Altenburg 2006a, p. 498). Lead firms in the chain set and/or enforce the parameters under which others in the chain operates; influence the decisions of upstream and downstream enterprises; identify dynamic rent opportunities; rearrange the production system accordingly and assign different roles to other firms, ensure integration of the whole production system (Altenburg 2006a, p. 499).

Altenburg (2006a) concluded that all governance structures share the same feature, namely that they “imply the transmission of information on markets and standards and incentives along the value chain and some non-market mechanisms to coordinate production and assure certain parameters” (Altenburg 2006a, p. 502). Nevertheless, they also exhibit different features in the “intensity of interference by lead firms, the degree of formalisation of contracts, the power relations, the distribution of gains and risks among cooperating firms and other characteristics”. Thus, the concrete form of value chain governance varies considerably, ranging from basic agreements on terms of delivery to outright imposition of detailed procedures and cost-reduction strategies by powerful customers (Altenburg 2006b, pp. 493–494).

2.7 Typology of value chain governance

The typology of value chain governance is of particular importance because there is a fundamental necessity to predict under what circumstances certain type of governance would arise and what are the determining factors for the development / change of value chain governance.

Since value chain approach is also interesting for policy-makers, who seek to support economic development in line with poverty alleviation, it is necessary to identify factors that influence and trigger the upgrading of a value chain, so that these factors can be precisely addressed through specific development interventions.

Hitherto, there are three different, well-known typologies of value chain governance. These are concisely elaborated as follows.

2.7.1 Buyer- and producer-driven chains

The first typology was described in global commodity chains by Gereffi (1994, pp. 93–122) and later in Gereffi (1999) based on the “drivenness” of the chain, namely who assumes the role of governance or “drives” the whole value chain. Two types of value chain governance were described here:

- i. **Buyer-driven chains** occur in value chains where the critical governing role is played by a buyer at the apex of the chain such as retailers, marketers, and branded manufacturers that specify the product specifications. These are characteristic of labour intensive, consumer goods industries (particularly contractors in developing countries), such as footwear, garments, furniture, handicrafts, and toys.
- ii. **Producer-driven chains** occur in value chains where the key governing role is played by producers that generally command particular vital technologies and coordinate tightly their production networks. They also assume the responsibility to assist both their suppliers and their customers. These are characteristic of capital- and technology-intensive industries – sometimes in the form of foreign direct investment (FDI) – such as automobiles, aircraft, computers, semiconductors, and heavy machinery.

Nonetheless, this distinction was not adequate to characterise the variety of network forms discovered in other empirical studies (Gereffi et al. 2005, pp. 83-83). Studies in horticulture industry by Dolan et al. (2000) and in footwear industry by Schmitz et al. (2000) underpinned the idea that thanks to their market power global buyers (retailers, marketers, and branded manufacturers) possess the capability to exercise intensive control over their value chains despite the fact that they possess no production, transport or processing facilities. Other studies from Sturgeon (2002) and Sturgeon et al. (2005) on electronic industry and contract manufacturing discovered other forms of coordination based on the degree of standardisation of product and process:

- i. **Commodity supplier** that provides standard products through arm's length market relationships
- ii. **Captive supplier** that makes non-standard products using machinery dedicated to the buyer's needs
- iii. **Turn-key supplier** that produces customized products for buyers and uses flexible machinery to pool capacity for different customers.

These studies underlined the complexity of information transferred along the chain and the degree of asset specificity in production equipment. Other studies by Humphrey et al. (2000) and Humphrey et al. (2002) highlighted the capability of supplier or supplier competence as a determinant factor in the degree of control / power of exerted by buyers upon their suppliers and thus shapes the governance pattern of the chain.

2.7.2 Typology of governance according to Gereffi et al. (2005)

Drawing on the aforementioned approaches that were applied in the industry case studies of bicycles, apparel, horticulture, and electronics, Gereffi et al. (2005) proposed the second typology of value chain governance. In this typology market governance and hierarchical governance in vertically integrated firms are considered as the opposite ends of a spectrum of explicit coordination. Between these two ends the intermediate forms of explicit coordination, i.e. the network relationships, are further distinguished into 3 different categories: modular, relational, and captive. By acknowledging that in fact many factors (history, institutions, geographic and social contexts, evolving rules of the game, path dependencies) influence global chain governance, Gereffi et al. (2005) proposed a simple framework to build a theory of value chain governance based on following three key factors:

- i. **The complexity of information and knowledge transfer** required to sustain a particular transaction, particularly with respect to product and process specifications
- ii. **The extent to which this information and knowledge can be codified** and, therefore, transmitted efficiently and without transaction-specific investment between the parties to the transaction
- iii. **The capabilities of actual and potential suppliers** in relation to the requirements of the transaction.

Assuming that these three factors could only have two values – high or low – there are eight possible combinations of analytical, not empirical, governance types, of which 5 are actually reasonable (Gereffi et al. 2005, pp. 82–88). Table 2-2 summarised these governance types:

i. **Markets.** This type of governance can arise when:

- complexity of information exchanged is relatively low.
- transactions are easily codified, product specifications are relatively simple, and thus no asset specificity is needed.
- suppliers have the capability to make the products in question with little input from buyers.

Hence, the transactions in this governance type require little explicit coordination; the power relation is relatively equal because in market exchange buyers respond to specifications and prices set by sellers; and the costs of switching to new partners are low for both parties.

ii. **Modular value chains.** Typically, suppliers in modular value chains make products to a customer's specifications, which may be more or less detailed. Modular governance can arise when:

- transactions require complex information to be transmitted and information flow between firms are high regarding technical aspects.
- specifications of complex products can be codified, simplified, and unified through technical standards reducing component, product, and process variations (in the case of modular product architecture).
- suppliers have high competence to supply full packages and modules, which internalizes hard to codify (tacit) information. Usually suppliers use generic machinery that limits transaction-specific investments. They also provide 'turn-key services' covering competencies surrounding process technology and make capital outlays for components and materials on behalf of customers.

Therefore, the transactions can be coordinated relatively easy based on codified knowledge and thus resembles simple market exchange; the power relation is relatively equal to market exchange since buyers and suppliers can negotiate on prices; and the costs of switching to new partners are also low for both parties.

iii. **Relational value chains.** These networks are characterised by complex interactions between buyers and sellers, which often creates mutual dependence. Frequently, this mutual dependence may be managed through reputation, or family and ethnic ties. The role of spatial proximity in supporting relational value chain linkages is influential, but trust and reputation might well function in spatially dispersed networks where relationships are built-up

over time or are based on dispersed family and social groups. Relational governance arises when:

- transactions are complex and require complex information to be exchanged, frequently through face-to-face interaction.
- information on product specifications cannot be codified and thus results in high levels of asset specificity.
- suppliers have high capabilities and motivate lead firms to outsource to gain access to complementary competencies.

As a result, the transactions are characterised by high degree of coordination due to information complexity and non-codifiability and the cost of switching to new partners are high.

iv. **Captive value chains.** In this network category, small suppliers are transactionally dependent on much larger buyers. Captive suppliers are frequently confined to a narrow range of tasks, for example, mainly engaged in simple assembly.

- transactions exhibit high level of information complexity.
- information regarding process and product requirements (in the form of detailed instructions) is specified in detail by lead firms.
- supplier competences are low. Hence, they are dependent on lead firms for complementary activities such as design, logistics, component purchasing, and process technology upgrading. Also, due to the narrow range of tasks specific investment on production is high.

Thus, the coordination of transactions requires high degree of intervention, monitoring, and control by lead firms. They also have to provide enough resources and market access to the subordinate firms. Since lead firms have to make a lot of efforts in coordinating transactions, they tend to build transactional dependence in order to exclude others from reaping the benefits of their efforts and to prevent any opportunism behaviour. Power asymmetry in this governance type is clearly evident due to the domination of lead firms over their suppliers. Hence, the suppliers face significant switching costs and are 'captive'.

v. **Hierarchy.** This governance form is usually driven by the need to exchange tacit knowledge between value chain activities as well as the need to effectively manage complex webs of inputs and outputs and to control resources, especially intellectual property. This type of vertical integration is likely to arise when:

- products and processes are complex.
- information on product specifications cannot be codified.
- suppliers with high competence are not available. All these force lead firms to develop and manufacture products in-house.

This leads to the predominant coordination through managerial control, flowing from managers to subordinates, or from headquarters to subsidiaries and affiliates. Power asymmetry is obvious since coordination and control is exercised in hierarchical format.

Table 2-2 Key factors and outcomes of governance type according to Gereffi et al. (2005, pp. 82–88)

Governance Type	Key factors determining governance type			Outcome / characteristics of governance type	
	Information complexity	Information codifiability	Supplier competence	Degree of explicit coordination	Power asymmetry
Market	Low	High	High	Low	Low
Modular	High	High	High	Low	Low
Relational	High	Low	High	Medium	Medium
Captive	High	High	Low	High	High
Hierarchy	High	Low	Low	High	High

Source: modified from Gereffi et al. (2005, p. 87)

2.7.3 Typology of governance according to Altenburg (2006a)

According to Altenburg (2006a) the typology of value chain governance proposed by Gereffi et al. (2005) is useful, since it identifies some of the most important determinants that shape the form of value chain governance. However, it also ignores several other important factors which determine whether firms opt for vertical integration of external supply, and whether external supply relies on arm's-length market coordination or tighter forms of explicit, non-market management. Moreover, the proposed key factors and their combination are not imperative for the emergence of certain governance type. Captive supplier, for instance, need not be less capable than other types of suppliers: highly capable and specialised second-tier auto parts suppliers may operate under more captive relations than relational producers in the garment industry. Therefore, to make a more comprehensive picture of governance that is closer to reality Altenburg (2006a, pp. 503–507) suggested a long list of factors influencing the behaviour of lead firms:

- i. **Core competences and complementary of production.** In order to gain and retain innovation rent firms aim at developing core competences (specialisation) and avoid their leakage through in-house production or limiting cooperation to trustworthy partners and restricting information flows; whereas non-core activities are outsourced.
- ii. **Supplier capabilities.** The availability of competent suppliers influences whether and to what degree lead firms outsource and to what extent they interfere in the production process of their business partners (controlling).
- iii. **Relationship-specific investments.** Firms often need to make specific investments in order to engage in or extend a certain trading relationship. Such investments are risky, susceptible to ex-post bargaining and contractual problems, and often sunk costs. Therefore, they have four effects on chain relation. First, they strengthen the bargaining power of the party which has not incurred such investments. Second, they favour vertical integration because potential suppliers may not be willing to become dependent on their customers. Third, they need to be safeguarded against opportunistic behaviour by building trust and reputation. Fourth, they erect entry barriers for newcomers, as they enable the supplier to produce at lower cost than potential competitors who have not yet made these investments.
- iv. **Complexity of transactions.** High transaction costs make in-house production relatively more profitable, under the assumption that hierarchical coordination within the firm avoids certain search and bargaining costs, as well as the transmission of information regarding products and processes.
- v. **Extent to which transactions can be codified.** The less is the codifiability of transactions, the higher is the costs of writing, monitoring, and enforcing contracts. Such transactions are preferably settled in-house or outsourced with a high degree of explicit coordination.
- vi. **Market transparency and search costs.** Lack of market transparency or prevalence of information asymmetry may involve substantial costs to search for appropriate suppliers. Hence, outsourcing may not be a viable option. For example, foreign investors who are not familiar with local business environment may find it difficult to identify and assess the competences of local suppliers.
- vii. **Uncertainty about market development.** If the availability of inputs is uncertain, this creates an incentive for backward integration or in-house production to safeguard against fluctuating availability of inputs and unstable prices. If output markets are subject to strong fluctuations, producers tend to avoid investment on fixed assets, retain the high-

probability demand for themselves and pass the low-probability demand on to sub-contractors.

- viii. **Market structure.** A high number of small dispersed suppliers increases the transaction costs of procurement and creates an incentive to produce in-house, or to support concentration processes among suppliers. However, concentration among suppliers is less common. Instead, it is frequent that concentration takes place among buyers resulting in greater market power, more advantageous position for them; whereas the level of competition among their suppliers increases.
- ix. **Institutional framework conditions.** As new institutional economics has proved, economic transactions rely on institutional framework conditions. Both formal and informal institutions, inter alia, can help to contain the opportunistic behaviour of contractual partners which may result from incomplete contracts and thus influence heavily the outsourcing behaviour of firms. On the one hand, the existence of formal regulations, such as property rights or standardisation, and their strong enforcement may incentivise lead firms to outsource with less tighter control. On the other hand, over-regulated business transactions and weak enforcement of law and regulations in a certain location may deter lead firms from outsourcing to companies in the respective location and force them to impose tight control over their suppliers. Furthermore, the prevalence of informal institution like trust among value chain operators may complement formal contract and lower transaction cost. Strong social bonds may substitute formal institution and are of particular importance in places where law enforcement is weak and unreliable.
- x. **Capital intensity and the cost of capital.** Whenever considerable investments are necessitated to perform a particular chain activity, buyers will preferably source from independent suppliers. For example, if an agro-processing company wants to extend the production capacity, it is more feasible to outsource than to bear high capital costs for agricultural land. Outsourcing also enables the buyer to shift other capital cost like warehousing to their suppliers. Hence, high cost of capital serves as an incentive for outsourcing.
- xi. **Consumer demand.** As consumers increasingly exert pressure on companies to comply with certain product and process standards regarding social, environmental and safety standards; companies are required to implement a high degree of explicit coordination and control to their supply chains, as well as to introduce measures ensuring the compliance of the standards throughout the chain. Also, the issue of traceability, e.g. for agricultural and forestry products, forces companies at the end of the chain (retailers) to use different com-

binations of pressure and support on upstream companies – either directly or indirectly through first and second tier suppliers.

The following figure elucidates the causal relation between each factor and the tendency for outsourcing and for explicit coordination and control using typical cases.

Table 2-3 Overview of factors determining outsourcing and explicit coordination

Factor	Typical case	Tendency for outsourcing	Tendency for explicit coordination
Core competences and complementary of production	Firm focuses on the development of core competences Note: non-core activities are outsourced. Core competences are kept in-house or outsourced with tight restriction / control.	Higher	Higher
Supplier capabilities	Firm can find highly capable suppliers	Higher	Lower
Relationship-specific investments	Buyer firm demands products which require specific investments Note: supplier firm tends to avoid the risks of opportunism, ex-post bargaining, and incomplete contracts and, therefore, would negotiate for a vertical integration with the buyer.	Lower	-
Complexity of transactions	Firm needs to carry out complex transaction	Lower	Higher
Extent to which transactions can be codified	Firm can clearly codify specifications and requirements.	Higher	Lower
Market transparency and search costs	Firm experiences difficulties in gathering market information.	Lower	Higher
Uncertainty about market development	Firm is uncertain about input market. Note: By in-house procurement or tight coordination the risk of fluctuating input availability and price can be dampened	Lower	Higher
	Firm is uncertain about output market. Note: firm tends to avoid investment on fixed assets, retain the high-probability demand for itself, and pass the low-probability demand on to sub-contractors.	Higher	-
Market structure	Firm faces a high number of small dispersed suppliers. Note: firm tends to settle business transactions in-house rather than with many small suppliers.	Lower	-
	Firm is one among few big market players. Note: firms in oligopolistic market have greater power and thus can impose explicit coordination and tight control upon their supply chain.	-	Higher
Institutional framework conditions	Firm operates in well-regulated business environment with strong enforcement. Note: strong institutional framework conditions render inter-firm business transactions efficient. As opportunistic behaviour is curbed, looser control and less explicit coordination is required.	Higher	Lower

	Firm faces burdensome regulations regarding business transactions in a specific location. Note: Firm prefers to outsource to location with supportive regulatory framework	Lower	-
	Firm is situated in low-trust environment with high prevalence of fraud. Note: If any outsourcing is feasible, then tight control is needed to curb opportunism.	Lower	Higher
Capital intensity and the cost of capital	Firm needs to include a certain productive activity which requires big investment. Note: instead of investing firm prefers to outsource activities requiring high capital intensity from independent suppliers.	Higher	-
Consumer demand	Firm needs to impose certain standards to satisfy consumer demand.	-	Higher

Source: own compilation based on Altenburg (2006a, pp. 503–507)

To sum up, the make-or-buy decision and the degree of explicit coordination and control rely on many factors, are frequently context-specific, and full of trade-offs. Even the interplay of similar factors could create different outcomes since each company has also its own internal policy, follows different corporate strategy, and is situated in diverse geographical and sociological conditions. Moreover, it should be noticed that one single value chain can exhibit different patterns of governance at different stages of the chain. All of these make it difficult to establish a generally valid typology of governance, to predict its emergence despite the identification of certain circumstances, and to forecast how firms react to particular incentive. Altenburg (2006a) insinuated that it is nearly impossible to categorise governance with its complicated factors – a conclusion similar to the conclusion drawn by Benz (2004a) regarding the theory of governance.

2.8 Concluding remarks

Up to this point it is clear that the concept of governance does not and cannot have any definite, unanimous theory behind it – as it is argued by Altenburg (2006a) and Benz (2004a). Indeed, what commonly shared among authors is limited to the core concept. Governance concept from various authors contains similar notion that it deals with the manner of coordinating and controlling interdependent, diverse actors with regard to a particular goal based on certain institutional framework; as practically all authors on value chain governance employed similar definition and associated identical terms with it. Nevertheless, chain governance concept exhibits a wide array of variations concerning emphasised issues (e.g. typology) depending on the subject field, research question, theories employed to approach it, etc.

Since the complex reality of value chain governance entails diverse aspects and connections, it is still important to sharply distinguish different elements / aspects – as Kaplinsky et al. (2001) called for the differentiation between governance (setting and enforcing rule) and co-ordination (management of regular chain activities) – in order to gain deeper insight and more comprehensive understanding. It is also apparent that most discussions on value chain governance take the stand point solely of big enterprises operating globally and organising their supply chains across borders. However, if value chain analysis should inform policy makers regarding how to formulate policies supporting economic development, particularly poverty alleviation, and how to design interventions to achieve certain development impacts; then value chain approach should also make more efforts to comprehend the stand point of certain poor economic groups or micro, small and medium enterprises (MSMEs) of value chains in developing countries. By shifting the stand point unto those groups the analysis on chain governance may show different results concerning e.g. the circumstances under which certain governance type arise, the aspects influencing the processes of coordination and controlling along the chain, the determinant factors for chain upgrading, etc. This shift also enables researchers to identify opportunities and potentials for MSMEs to initiate and drive chain upgrading instead of always being dependent on lead firms. Furthermore, the shift of focus from global perspective to local or regional level – as most value chains in developing countries are of local or regional importance – may discover new insights into how governance is affected by local peculiarities, such as social embeddedness.

Last but not least, it is also evident that the theories applied to approach value chain governance are mainly from industrial organisation theory, management theory, and transactions cost theory. These aspects of governance are, indeed, intensively discussed and well explained. Nonetheless, albeit value chain governance inherently concerns very much the setting and enforcing of rules – thus institution⁸ –; there have not been many attempts to illuminate institutional aspects of governance from the perspective of institutional theories. Some authors have mentioned the aspect of formal institution, en passant, but the prevalence of informal institutions and its effects on value chain governance have not been clearly described and explained. Therefore, it is important to extend the approach to value chain governance by apply-

⁸ See Lütz (2004, pp. 148–172) for an extensive discussion about how economic governance in general is explained from the perspective of new institutional economics.

ing institutional theories that primarily focusing on aspects relevant to explaining the interdependency between institutional framework and the economic performance of value chain. Nonetheless, as institutional theories are developed in different disciplines and thus contain different emphases, the following chapter will discuss mainly this matter and delineate the theoretical framework and analytical framework applied in this research.

3 Theoretical and Analytical Framework

The previous section has clarified the term ‘upgrading’ and elaborated the various perceptions on ‘value chain governance’ and concluded with a need to examine further the concept of governance in the light of institutional theory. Institutional theory, however, is not represented by a single scholar or a school of thought, but rather by various scholars from economics, political science, and sociology. They advanced strikingly diverse concepts and arguments exhibiting as many similarities as differences. These concepts, in particular those contributing to the creation of theoretical framework, are briefly reviewed in the next three sub-chapters. The subsequent sub-chapter summarises the elaborated concepts of institution with an omnibus definition of institution as proposed by Scott (2008, pp. 48–50). Following this theoretical framework this chapter is then closed by the analytical framework Macro-Micro Model as posited by Coleman (1990) and Esser (1999).

3.1 Institutional theory in economics

3.1.1 Early institutional theory in economics

The earliest institutional arguments in economics arose in Germany and Austria in the late 19th century as one by-product of the famous *Methodenstreit*: the debate over scientific method in the social sciences. This debate was between Gustav von Schmoller and his Historical School against Carl Menger, a Viennese economist, upon whose arguments new institutional economics (NIE) later on has built its theory. Schmoller argued that economics cannot be reduced to a set of universal laws since it operates within a social framework that is in turn shaped by a set of cultural and historical forces in specific time and place. He criticised the assumption of ‘economic man’ as being overtly simplistic and thus needs to embrace more realistic model of human behaviour.

3.1.2 Old institutional economics (OIE)

German Historical School had exerted great influence on American scholars of old institutional economics (OIE) represented by e.g. Thorstein Veblen, John R. Commons, and Wesley C. Mitchell. Finding the orthodox theory unhelpful in formulating public policy and even hostile to the idea that the state can ameliorate economic and social problems, they developed two main criticisms toward the orthodox theory: First, its predictions diverged from empirical reality (they identified in the real world that state policies such as trade protection contributed to economic growth and trade unions raised wage levels); and, second, these discrepancies

arose from a lack of realism in the model's assumptions. In line with these criticisms OIE scholars offered – despite differences of emphases among them – their own ideas (Jacoby 1990, pp. 318–320):

- i. **Indeterminacy.** Whereas the orthodox model assumed perfect competition and unique equilibriums; OIE scholars pointed to pervasive market power and to indeterminacy even under competition.
- ii. **Diachronic analysis.** Economic theory should be grounded on concrete reality or factual circumstances that are historically and locally specific, and on the dynamic changes of economy as a moving, changing process (diachronic). By contrast, (neo-) classical economists viewed economic theory as an abstraction from reality that isolated its transhistorical and universal aspects (synchronic). OIE scholars insisted that diachronic analysis had to be part of economics, alongside synchronic abstraction.
- iii. **Behaviour realism.** Institutional theorists suggested that the model of human behaviour should embrace more pragmatic and psychological-realistic model. They considered that the assumptions of orthodox economists – derived from utilitarianism – on behaviour model of individuals, namely rational, hedonistic, utility-maximizing, self-interested, and individualistic agents, as inadequate or erroneous.
- iv. **Endogenous determination of preference.** OIE scholars also viewed individuals' preference function as not given, 'taken for granted', and stable. Individuals are "partially malleable agents" (Hodgson 2001, pp. 248–249) whose model is subject to explanation. For example, the analysis of individual behaviour and preference must incorporate, e.g. habits, as they are a component of rationality that not only have a historical dimension (they cause past choices to constrain a person's present ones), but they also have social and cultural origins. In contrast, orthodox economists viewed individual's wants as given and exogenous to the realm of economic analysis.
- v. **Product and producer of institution.** The view of 'atomistic' individual behaviour – individuals act independently regardless any external factors outside themselves – was abandoned. Institutional theorists argued that individuals are shaped by the time- and place-specific 'frameworks' under which they exist. These 'frameworks' shaping individuals were defined as institution. These could be "collective control over individual action" (Commons 1931, p. 649) that could be exercised in an unorganized form through

habit or custom and/or in an organized form through legally enforced court decisions¹; or “habits of thought” (Veblen 1919, p. 239) that directs individual’s conduct in habitual relation with his/her fellows in the group. In this regard, individuals are ‘product of institutions’. On the other side, individuals are interacting among themselves and thus intentionally or unintentionally form and alter institutions. In this sense, individuals are viewed as ‘producer of institution’ (Hodgson 2001, pp. 248–249).

Notwithstanding the fruitful insights and valuable critiques to complement, correct, and extend the arguments advanced by orthodox economics, OIE did not prevail and its impact was blunted. Focusing on historically and locally specific circumstances scholars of OIE had indeed produced a large volume of descriptive work. They, however, failed to generate unifying explanatory theories from their extensive data². Hence, they “overemphasised the uniqueness of different economic systems and underemphasised the value of analytic theory” (Scott 2008, p. 5). Even Hodgson, a sympathetic critic of OIE, acknowledged that Veblen exhibited “an explicit hostility to intellectual ‘symmetry and system-building’” (Hodgson 1998); whereas the arguments advanced by Commons were hampered by his own idiosyncratic terminology and unsystematic style of reasoning (Mitchell 1935, pp. 635, 643). This was the fundamental reason of Ronald H. Coase when he dismissed the OIE by commenting “John R. Commons, Wesley Mitchell, and those associate with them were men of great intellectual stature, but they were anti-theoretical, and without a theory to bind together their collection of facts, they had very little that they were able to pass on” (Coase 1998, p. 72); and further, “without a theory they had nothing to pass on except a mass of descriptive material waiting for a theory, or a fire” (Coase 1984, p. 230).

3.1.3 New or Neo-institutional economics (NIE)

Despite bearing the name ‘new or neo-institutional economics’, NIE has a stronger intellectual kinship with the critiques of OIE, rather than with the ideas and arguments of OIE that were further advanced by sociologists and organisational scholars. Most of new institutional economists do not seek to replace orthodox economic theory, but rather to develop an eco-

¹ Cf. Commons (1931, pp. 650–657); Mitchell (1935, pp. 638–640)

² Cf. Jacoby (1990, p. 320)

economic theory of institutions. Three common themes underlie the contributions of NIE scholars (Scott 2008, pp. 26–27):

1. The model of economic agents was extended beyond that of orthodox economics. Simon's conception of 'bounded rationality' was utilised by Williamson in his transaction cost economics.
2. The focus of economic study was shifted from economic equilibrium toward economic processes that evolves over time and reflects learning by economic agents. As they recognised that institutions are affecting economic transactions; the emergence, maintenance, and transformation of institutions were considered as an important variable.
3. Market mediation was not viewed as the sole coordination mechanism for economic activity. Rather, many other types of institutional structures influencing economic transactions – such as the role of governmental systems, institutional structure of organisations – became important topics of study.

These common themes are crystallised from the contributions of some NIE scholars whose main thoughts are briefly reviewed in the following sub-chapters.

3.1.4 Transaction cost economics

With his article “The Nature of the Firm” (Coase 1937) Ronald H. Coase inaugurated the transaction economics approach. He posed the question why some economic exchanges are carried out within firms under a governance structure involving rules and hierarchical enforcement mechanisms, rather than being directly subject to the price mechanism in markets. Coase (1937, p. 349) argued that the reason must be that “there is a cost using the price mechanism”, namely “the costs of negotiating and concluding a separate contract for each exchange transaction which takes place in a market”. It is because of these transaction costs that firm arise.

Albeit his article was much cited, his insight lay fallow until it was resurrected in the 1970s by Oliver E. Williamson. According to Williamson (1973) and Williamson (1975) transaction costs increase when two paired conditions arise: first, when cognitively bounded individuals are confronted by increasing complexity and uncertainty; and, second, when the risk of opportunism is high while no alternative exchange partners are available. In such situations exchanges are likely to be removed from market and brought within an institutional framework where more elaborate control is possible. Various institutional frameworks or ‘governance

systems' are to be considered in this case, ranging from markets, hybrid organisational forms (e.g. franchising or alliance arrangements), to various types of hierarchical structure (e.g. unified firms or multidivisional corporations). In his view Williamson treated organisations as an institutional form or a governance system devised to reduce transaction costs.

Although Williamson took seriously the effects of varying institutional contexts or governance structures on economic behaviour, he remained firmly within the neoclassical tradition and constructed his concept on 'atomistic and individualistic' approach assuming 'opportunistic' behaviour of individuals and ignoring the variable of preference that depends on circumstances such as the structure and culture of the firm (Scott 2008, p. 29). Furthermore, he also showed little interest in the processes by which varying governance structures arise or are transformed. The macro-questions regarding the origins and effects of the 'institutional rules of the game: property rights, laws, norms, conventions, politics' are, according to him, the subject matters of economic historians and sociologists and thus treated these as 'background conditions'.

3.1.5 Economic history

In contrast to transaction cost economists who particularly focus on micro- and meso-analyses of institution; economic historians focus on a macro-level of analysis and account for the emergence, development, and change of institutions that encompass economic, political and social factors; how they have played a role for economic growth and affected economic processes; and how these institutions, in turn, have been affected by ideological and non-economic factors. Among them the most renowned is Douglas C. North, Nobel laureate in economic science, who directs the attention toward wider institutional frameworks. North (1990/2005) defined institution as follows:

Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change. [...] Institutions reduce uncertainty by providing a structure to everyday life. (North 1990/2005, p. 3)

His focus is on development and change, rather than on comparative static³. Although he employs the theory of transaction costs in analysing economic systems, he treated transaction costs rather as ‘dependent variables’ that are subject to the effects of wider institutional frameworks than as ‘independent variables’ to explain why actors choose different governance mechanisms (Scott 2008, p. 29).

3.1.6 Evolutionary Economics

The evolutionary economics developed by Richard R. Nelson and Sidney G. Winter put emphasises on adaptation and selection capabilities – analogous to biological models – of firms: firms have ‘routines’ that are equivalent to the genes in a plant or an animal (Scott 2008, pp. 30–31). As historical entities firms accumulate knowledge and capabilities over time resulting in routines that are produced through an endogenous learning process based on experiences. Routines comprise both the conscious, tacit knowledge and skills held by those participants performing organisational tasks. In fact, the ability to reproduce and modify routines in the face of changing situations is the key to survive. Hence, the main concern of evolutionary economists is to examine how competitive processes or changes take place in firms: whilst firms with routines best adapted to changing conditions can flourish, those with less adequate adapted routines stagnate. Hence, their approach is very much process-oriented.

Notwithstanding the absence of the term ‘institution’ in their arguments, the conception of organisational routines clearly exhibit a type of institutionalised behaviour. As regards the determinant factors shaping behaviour and structure in organisations, Nelson and Winter employ a much broader conception of factors than transaction cost economists do.

3.2 Institutional theory in political science

3.2.1 Bounded rationality and routines

Herbert Simon developed the theory of ‘administrative behaviour’ to counteract individual rationality. He challenged the assumption that actors have complete knowledge of means and their consequences (the limits of individual cognitive capacity or “bounded rationality”). Together with March, he developed the argument that most behaviour is guided by preset routines that greatly reduce the discretion (decision making) so that they make fewer choices and

³ Cf. North (1990/2005); North (1989)

are circumscribed in them. Value assumptions, cognitive frames, and rules and routines are the ingredients that conduce individuals to behave rationally (Simon 1997).

3.2.2 Rational choice institutionalism

The emergence of rational choice institutionalism (RCI) was inspired by the observation of empirical phenomena in the U.S. Congress that deviate from conventional rational choice theory: whilst the postulate of conventional rational choice theory predicts that “the multiple preference-orderings of legislators and multidimensional character of issues” would lead to instability or chaotic contention among legislators in the U.S. Congress; the “Congressional outcomes actually show considerable stability” (Hall et al. 1996, pp. 10–11). Rational choice institutionalists turned to institution to explain this discrepancy.

Institutions are viewed as a rule system, both formal and informal, that constraint or structure the action scope of individuals behaving rational, such as: procedures, structures constraining the choices, information, and sequence of action of Congress members; a rule system that creates stability. In this respect, institutions are devised to solve the problem of collective action. If each individual in politics attempts to maximise the attainment of his/her own preferences, this likely results in collectively suboptimal outcomes, such as in the ‘prisoner’s dilemma’ and the ‘tragedy of the commons’. The presence of institutions and their arrangements would guarantee, or at least increase the likelihood of, complementary behaviour by constraining the choices of action. Thus, institutions can also be seen as central mechanism in sustaining stability or equilibriums.

Following Hall et al. (1996, pp. 10–13), the behavioural assumptions employed by rational choice institutionalists are individuals behaving rational following the logic of instrumentality or expediency using calculating or computational reasoning to derive strategy in attaining the maximum realisation of their stable preferences or interests. Building on this model of individual behaviour rational choice institutionalists emphasis the role of strategic interaction in the determination of political outcomes: First, an actor’s behaviour is likely to be driven, not by impersonal historical forces, but by a strategic calculus. Second, this calculus will be deeply affected by the actor’s expectations about how others are likely to behave as well. Institutions structure such interactions, by affecting the range and sequence of alternatives on the choice-agenda or by providing information and enforcement mechanisms that reduce uncertainty about the corresponding behaviour of others and allow ‘gains from exchange,’ thereby leading actors toward particular calculations and potentially better social outcomes.

Thus, rational choice theorists take a classic ‘calculus approach’ to the problem of explaining how institutions affect individual action.

Rational choice institutionalists have also developed a distinctive approach to the problem of explaining how institutions originate: Using deduction to arrive at a stylised specification of the functions that an institution performs, they then explain the existence of the institution by reference to the value those functions have for the actors affected by the institution. This formulation assumes that the actors create the institution in order to realise this value, which is most often conceptualized, as noted above, in terms of gains from cooperation. Thus, the process of institutional creation usually revolves around voluntary agreement by the relevant actors; and, if the institution is subject to a process of competitive selection, it survives primarily because it provides more benefits to the relevant actors than alternate institutional forms. For example, by drawing on Williamson’s transaction cost theory rational choice institutionalists argued that the institutions of the Congress lower the transaction costs of making deals and therefore allowing gains from exchange among legislators to create the passage of legislation possible. In sum, the origin and maintenance or abandonment of institutions over time is explained by reference to the way in which it minimises transaction, production or influence costs.

However, observing the evolution within the rational choice tradition Shepsle (2006) concluded that the understanding of institution is moving in two continua: exogenous/endogenous and structured/unstructured. On the one hand, institutions can be taken as exogenous constraints or as exogenously given ‘rule of the game’. On the other hand, institutions can take a deeper and subtler form as simply ‘the ways in which the players want to play’ a game (Shepsle 2006, p. 25). Further, some institutions may take a structured and formalised form that is robust over time, e.g. political party, congress, or assembly. Some others may be less structured providing a less firm foundation for analysis, e.g. norm of senatorial courtesy, coordinated arrangements and collective action; although these can be easily recognised as established patterns and practices.

3.3 Institutional theory in sociology

3.3.1 Early institutional theory in sociology

Emile Durkheim

In his early work Emile Durkheim, French sociologist, viewed that collective order is built on the presumption of rational action and can be successfully negotiated in an individualistic way. In his later work, however, he amended his explanations by changing from instrumentalist and individualistic approach unto collective-, normative-framework approach: the non-contractual element. It is the presence of, what Durkheim termed, that ‘non-contractual element’ that makes a system of contractual relations is possible at all. It opens the possibility of contractual relation because, first, without it both contracting parties would have to settle all the implications of a contract ad hoc anew including those for curbing opportunism/fraud and preventing oppression/contract-signing under duress; and, second, more importantly the normative rules of the institution of contract accounts for the principal element of order that creates stability of the system. Furthermore, Durkheim’s view on institution differed profoundly with Veblen’s in the essential nature of institutions: instead of being complex habits they are normative rules ultimately dependent on common ethical values (Parsons 1935, pp. 647–650).

Durkheim’s mature formulation emphasises the significance of symbolic systems, namely systems of belief and ‘collective representations’, shared cognitive frames, schemas and values. They are perceived by individuals as objective, external, and even coercive facts; although initially they are subjectively created through human interaction. For Durkheim these symbolic systems are social institutions (Scott 2008, pp. 11–12).

Max Weber

Despite the fact that Max Weber never used the term ‘institution’ in all of his works, his thoughts reflect unanimously an extended conception of economics, inter alia, from the institutional perspective. Weber’s view on economics and its relation to other social sciences is insightful and groundbreaking. With his programmatic concept of ‘social economics’ (*Sozioökonomik*), he proposed that economic phenomena in general should be analysed through several, not one, of the social sciences. Each social science has its own strengths and weaknesses and therefore the analyst should choose the appropriate combination according to the purpose of analysis: ‘economic history’ for the in-depth analysis of a single economic phenomena in the past, ‘economic sociology’ for the study of a typical set of economic actions in present time, ‘economic theory’ for explaining the pure logic of interest-driven action during some period.

Standing at the crossroads of three major debates at the turn of 19th and 20th centuries, Weber possessed a unique theoretical stance that attempted to reconcile the contending ideas at that time. Scott (2008, pp. 11–12) characterised it in general as follows:

- i. **Economics as a natural science vs. as a cultural/social science.** Weber argued against an objectivistic approach – like in a value-free natural science – to economics and insisted instead on treating economics as social science since the object of study, i.e. individuals, subjectively attach meaning to events. Individuals do not mechanically respond to stimuli; they first interpret them based on their ‘cognitive interest’ which is a product of specific cultural conditions, and then determine their response (Swedberg 2001, pp. 83–84). Therefore, understanding subjective meanings attached by individuals into their own actions are the key in understanding social actions.
- ii. **Idealist vs. materialist view.** Instead of supporting one of these conflicting views, Weber employed interpretative (*deutende*) approach to combine material conditions and interests with idealist values as the motivation and guidance for action.

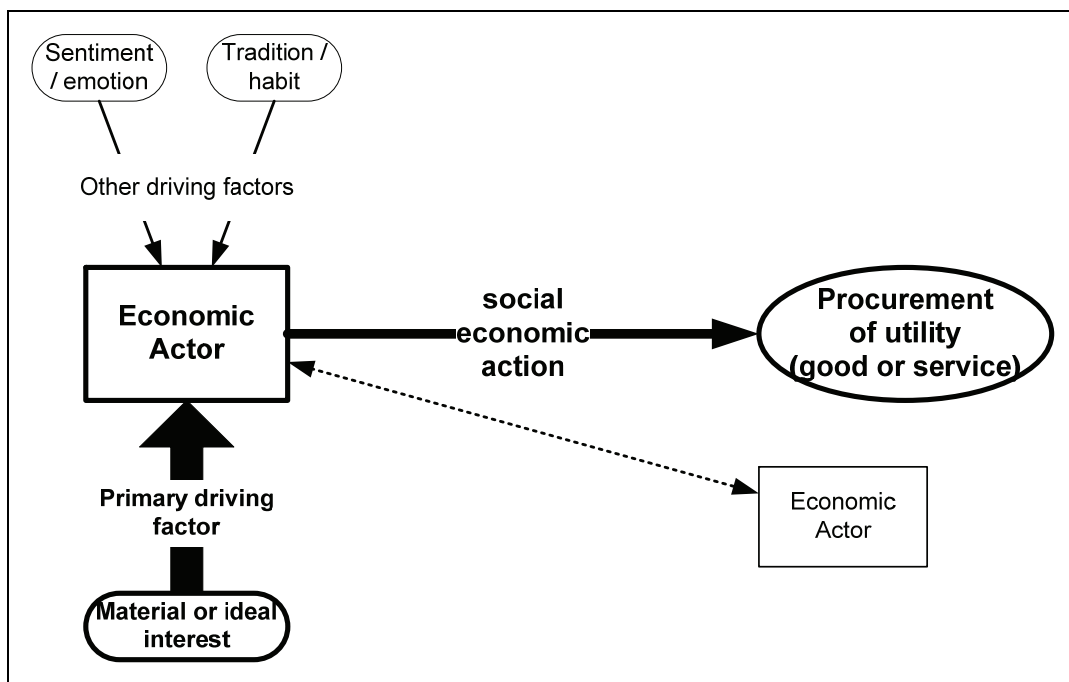


Figure 3-1 Weber's basic analytical unit: 'social economic action'

Source: modified from Swedberg (2001, pp. 84–85)

- iii. **Historical School vs. neoclassical economics.** Weber tried to balance the abstract insights of theoretical economics ('abstract theory') with the insights based on empirical material ('realistic theory' or 'empirically oriented economics'). On the one hand, he sup-

ported the idea of Menger and the classists that theoretical models are valuable instruments in formulating and evaluating general arguments abstracted from specific, complex, discrete, and historically embedded systems. On the other hand, he argued that economics should consider historical circumstances and employ comparative approach as it is suggested by the institutionalists. In synthesising these conflicting ideas, he proposed that abstract theory can improve the more empirically oriented forms of economics through its insistence on the analytical elements, especially the way in which it constructs categories or 'ideal types'. Ideal types are not the reality; but rather aids in guiding analysis and informing comparative studies, thereby increasing understanding of the real world (Swedberg 2001, pp. 82–84). More specifically, Weber treated the model of 'rational economic man' as an ideal type that evolves historically under specific cultural rules of Western civilisation⁴. Hence, for him rational economic man is a variable and not an assumption.

Summarising Weber's works particularly those contributing to economic sociology; Swedberg (2001, p. 90) delineated five basic principles of the Weberian approach to economic sociology:

- i. **The basic unit of analysis is social economic action.** Weber built his analysis of economy on his basic definition of 'social economic action', namely an action by an individual, which is primarily driven by both material and ideal interests and to some extent by tradition/habit and sentiments/emotion, aimed at utility either in the form of a good or a service, and where other actors are always taken into account⁵ (see Figure 3-1). This explicitly states that the analysis starts with the actions of a single individual (methodological individualism⁶) by also considering the behaviour of other individuals, and then proceeds with more complex social interactions, namely 'social economic relationship' – when two actors direct their economic social actions at each other – and 'economic organisation'.
- ii. **Economic action is presumed to be rational, until otherwise proven.** It is important to note that, first, the concept of rationality employed by Weber differs with the concept of

⁴ Cf. Weber (1905/2005)

⁵ Cf. Weber (1922/2005, pp. 3–18)

⁶ See Sub-chapter 3.6 for methodological individualism.

rationality posited by (neo-) classical economics: rationality means that the actor attempts to realize his or her interests, instead of that the actor has perfect information. Second, Weber embraced a modified version of interest theory that includes ideal interest. Hence, economic action is primarily driven by material interest ('instrumental rationality') or ideal interest ('value rationality'). If, however, the empirical reality deviates from the basic presumption, then another type of explanation is sought to account for the discrepancy, for example, by introducing tradition/habit and sentiments/emotion. Socio-economic science is anyway, as Weber insisted, a 'science of reality' (*Wirklichkeitswissenschaft*).

- iii. **Struggle and domination are endemic to economic life.** Economic life is characterised by, on the one hand, individuals struggling to realise their interests in a situation of scarcity and, on the other hand, by domination in most economic organisations as well as political system.
- iv. **Not only economic behaviour should be analysed, but also behaviour that is economically relevant and economically conditioned.** Weber argued that the subject area of analysis should not cover solely economic phenomena per se, but also non-economic phenomena influencing the economic phenomena ('economically relevant phenomena')⁷ and non-economic phenomena influenced by the economic phenomena ('economically conditioned phenomena'). This stands in line with his argument that economic sphere – certain areas of society where economic actions predominate – does not exist independently regardless with what happens in other parts of society, such as the political sphere, the religious sphere, and so on; they are indeed mutually influencing (see Figure 3-2).

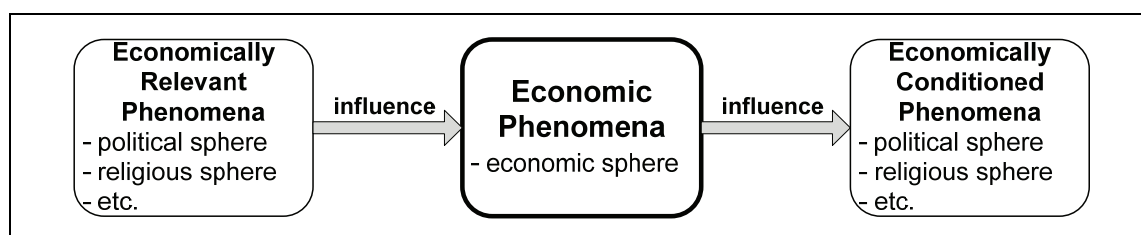


Figure 3-2 Economic phenomena, economically relevant and conditioned phenomena

Source: own compilation based on Swedberg (2001, p. 90)

⁷ One famous example for 'economically relevant phenomena' is Weber's creative work *The Protestant Ethics and The Spirit of Capitalism* (Weber 1905/2005).

Economic sociology should cooperate with economic theory, economic history, and other approaches – within the framework of social economics. A combination of different approaches in social sciences is needed to analyse economic phenomena comprehensively.

Talcott Parsons

Talcott Parsons attempted, like Weber, to reconcile an objective and a subjective approach to social action (Scott 2008, pp. 23–25). In his analysis of organisations he put a great emphasis on what he termed the ‘objective’ dimension of institution: a system of norms defining what the relations of individuals (or organisations) ought to be. Parsons viewed that normative frameworks existed independently of a given social actor. Analysts needed to take into account the ‘orientation’ of actors to them. As actors in an ongoing social relation oriented their actions to a common set of normative standards and value patterns, such normative systems becomes internalised by the actors. This is the ‘subjective’ dimension of institution, where individual actors internalise shared norms so they become the basis for the individual’s action, and even to the degree that the “conformity with it becomes a need-disposition in the actor’s own personality structure” (Parsons 1951, p. 37 in Scott 2008, p. 14). In this sense institutionalised action is motivated by ‘moral’ rather than ‘instrumental’ concern because the primary motive for obedience to an institutional norm lies in the moral authority it exercises over the individual. The actor conforms because of his or her belief in a value standard, not out of expediency or self-interest.

Contemporary theorists, however, noted several kinds of limitations from Parson’s formulation (Scott 2008, p. 15). First, he over-stressed the significance of cultural patterns in his conception of institutionalisation and thereby overemphasizing the control exerted by values over conditions. Second, consequently his conception of institution underemphasised the significance of interests and instrumental action and rational choice. Hence, his general cultural-institutional argument was limited to value-orientation and thereby its cognitive dimension was neglected. Third, notwithstanding Parson’s attempt to employ objective approach to social action, he did not succeed in expounding the existence of culture as an object of orientation existing outside the individual (objectivity), since he viewed culture mainly as an internalised element of the personality system (subjectivity).

3.3.2 Cognitive Theory

Following Scott (2008, pp. 36–37), during the 1940s and 1950s, the stimulus-response (S-R) approach was revised to include attention to the participation of an active organism (S-O-R)

that mediated between the provocation and reaction. The idea of the human organism as an information processor became popular. The mind came to be viewed by many as a computer-like apparatus that registered the incoming information and then subjected it to a variety of transformations before ordering a response (Markus et al. 1985, p. 141). The question became, what types of “software” provide the programs and transformation rules for these processes? Several debates attempt to answer this question.

While early social theorists, like Durkheim, insisted that ‘the framework of the intelligence’ or ‘mental model’ was determined by the social and cultural forms of the society into which an individual was born; a large and growing body of psychological theory and research suggests that, rather than providing a blank slate, humans come equipped with a number of fundamental mental capabilities, such as conceptions of space, number, cause-and-effect relations, and recognition of categories. Even the principles of language (syntax) are not learned but part of our bio-endowment (Bergesen 2004). Other debate concerns whether individuals’ thought processes follow abstract reasoning (‘computational’) or a ‘pattern-recognition’ (‘connectionist’) model. The latter appears better suited to explaining the ways in which socioeconomic actors cope with the kinds of uncertainties they encounter (North 2005, p. 27).

It is also being contested whether individuals are basically competent, rational beings or rather experience cognitive biases and limitations. Recent cognitive theory and research has been to emphasise the shortcomings of individuals as information processors and decision makers. However, despite these limitations, cognitive psychologists have recognised that individuals actively participate in perceiving, interpreting, and making sense of their world. By contrast, sociologists tended to give primacy to the effects of contextual factors, viewing individuals as more passive, prone to conform to the demands of their social systems and roles.

3.3.3 Phenomenology

Phenomenologists accentuate the role of shared knowledge and belief systems (cognitive frames and cultural frameworks), as opposed to shared norms and values (normative systems). These meaning and belief systems are not only as internalised, subjective beliefs, but also as external, objective frameworks. Defining institution as symbolic systems that are experienced as possessing a reality of their own that confronts individuals as an external and coercive fact, Berger and Luckmann defined the construction of common meaning systems as three phases of institutionalisation (Berger et al. 1967, pp. 58, 60-61 in Scott 2008, pp. 40-41):

- i. **Externalisation.** The production of symbolic structures whose meaning comes to be shared by the participants.
- ii. **Objectification.** The process by which symbolic structures become a fact, reality, ‘something out there’.
- iii. **Internalisation.** The process by which the objectified world is retrojected into consciousness in the course of socialisation.

3.4 Concluding remarks

Different scholars also emphasised the importance of retrospective view in analysing institution. Through the historical study it is possible to understand why the current state of institution has come about. The understanding of the emergence and change of institution obviously provide more solid basis than static snapshot of the present institutional condition does.

Some institutionalists found out that certain aspect of institution may constitute the most significant conclusion in their researches. Others do found something else. Thus, the assumption embraced in this research is that it seeks to differentiate things found out in the research and to highlight its differing factor; yet it shall try to see the logical connections between things and their relation. Hence, it follows an ‘inseparable yet distinguishable’ approach. On the one hand, an integrative view should be employed in analysing the elements of institutions; integrative in the sense that it explicitly rejects the notion of privileging the supremacy of one element while completely disregarding another element of institution. Indeed, most empirical observations of institutions showed that not one, single element is at work, but rather combinations of elements with diverse constellation of dominance constructing a social framework. How they are interdependent and reinforcing each others are in fact subject to explanation. On the other hand, the integrative view should be complemented by a distinguishing view so as to prevent the analysis from failing to identify important intrinsic differences among the institutional elements. By differentiating the components of each element, e.g. underlying assumptions, mechanisms, and indicators, it is possible to “identify underlying theoretical fault lines that transect the domain” (Scott 2008, p. 51).

From various schools of thought diverse scholars have contributed their valuable ideas and efforts in the endeavour to build sound theory of institution. Together they vouch that institutions are indeed complex phenomena with multiple facets that need to be approached comprehensively. These multiple facets of institution are summarised in the omnibus concept of institution to be delineated in the next sub-chapter.

3.5 Theoretical framework: The institutional pillars

The previous sub-chapters have briefly reviewed the contributions of diverse scholars from various disciplines or fields of study concerning institutional theory. Of course, all of these valuable contributions were not dealt with in their fullest richness, but rather limitedly focusing on those aspects relevant to the crafting of theoretical framework for this research. It is also to acknowledge that the arguments and ideas advanced by different scholars rest on varied assumptions and thus incorporating different emphasises – some mutually reinforcing, some conflicting. To incorporate the existing conceptual richness of institutional theory Scott (2008) proposed an omnibus definition of institution that can also systematise and structure those valuable contributions:

Institutions are comprised of regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life. (Scott 2008, pp. 48–50)

Regulative, normative, and cultural-cognitive systems have each been identified as vital ingredient of institutions: the central building blocks of institutional structures. These elements form a continuum – meaning that there is no clear-cut separation between the elements – moving from the conscious to the unconscious, from the legally enforced to the taken for granted (see Figure 3-3).

3.5.1 The regulative pillar

All scholars, in the broadest sense, underscore the regulative aspects of institutions: rule-setting, monitoring, and sanctioning activities. Many treatments of institutions emphasise their capacity to control and constrain behaviour. However, it is essential to recognise that institutions also support and empower activities and actors. Regulative rules are devised both to constrain undesired behaviour and to empower desired one. The conformity to such regulations or the ‘monitoring’ is backed up by sanctions – in negative sense of punishment and in positive sense of incentive – in an attempt to influence future behaviour.

The primary mechanism of control is coercion – force, sanctions, and expedience responses – that is legitimated by the existence of informal mores or formal rules and laws. Regulatory processes may operate through diffuse, informal mechanisms, involving folkways such as shaming or shunning activities; or they may be highly formalised and assigned to specialised actors, such as the police and courts. In fact, few rulers are content to base their regime on force alone; all attempt to cultivate a belief in its legitimacy. Apart from threat of sanctions

they may provide inducements or incentives for compliance. The most common case involves the use of authority, in which coercive power is legitimated by a normative framework that both supports and constrains the exercise of power. The regulative and normative pillars thus can be mutually reinforcing.

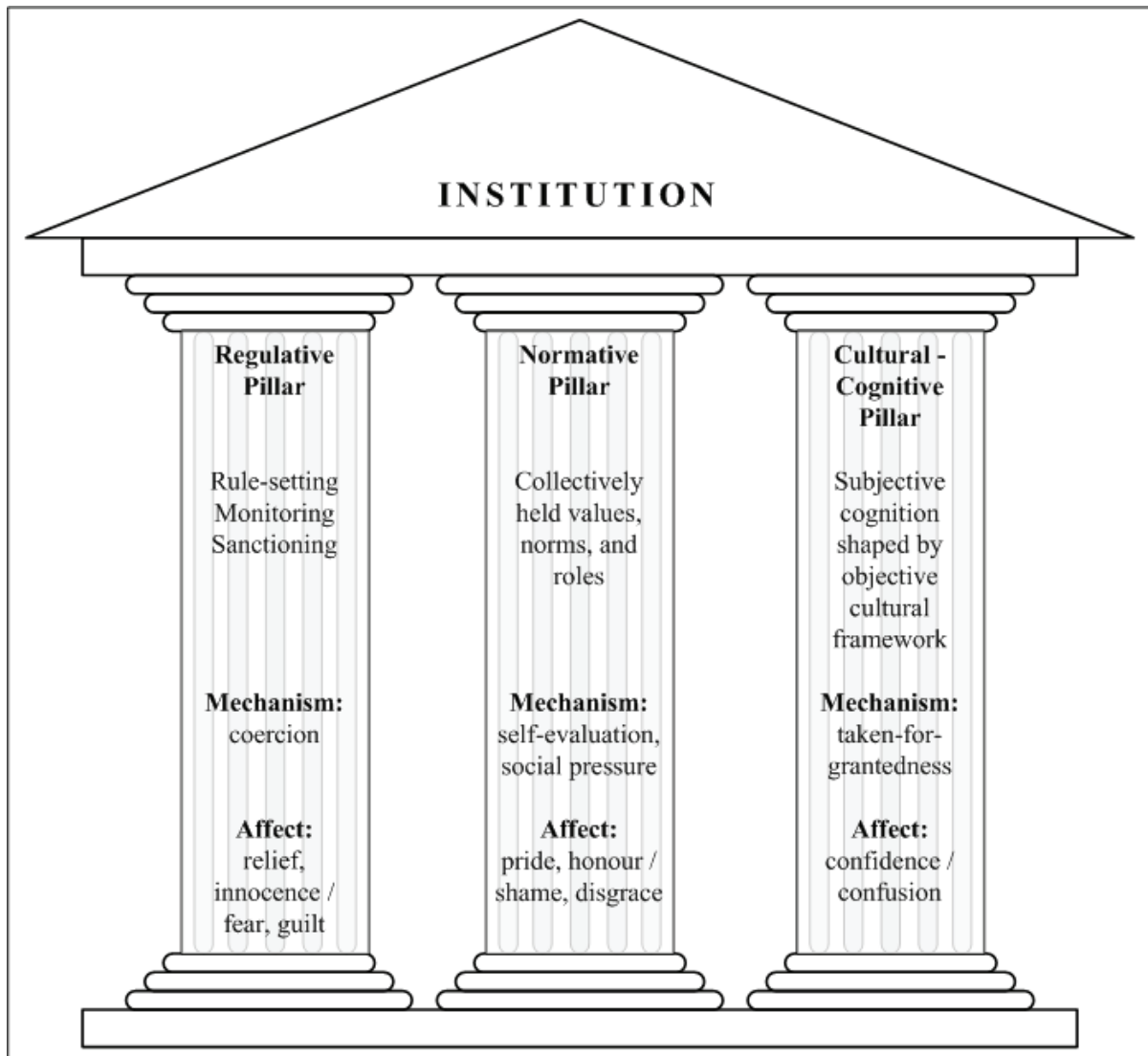


Figure 3-3 The pillars of institution

Source: own compilation based on Scott (2008)

Agreements can be monitored and mutually enforced, often also by neutral “third party” (important function of the state). North (1990/2005, p. 64) argued: “Because ultimately a third party must always involve the state as a source of coercion, a theory of institutions also inevitably involves analysis of the political structure of a society and the degree to which that political structure provides a framework of effective enforcement”. He also noticed that problem can arise because “enforcement is undertaken by agents whose own utility functions influence

outcomes” (i.e., third parties who are not neutral) (North 1990/2005, p. 54). The regulative aspect of institutions creates renewed interest in the role of the state: as ruler maker, referee, and enforcer.

As institutions comprise not only substance but also affect, they stimulate not only interpretative but also emotional reactions. The feelings induced may constitute an important component of power of institutions. To confront a system of rules backed by the machinery of enforcement is to experience, at the one extreme, fear, dread, and guilt, or, at the other, relief, innocence, and vindication. Powerful emotions indeed!

Emphasis on regulative pillars stems from the character of the customary objects studied by economists and rational choice political scientists: focus on the behaviour of individuals and firms in markets and other competitive situations, such as politics, where contending interests are more common and, hence, explicit rules and referees are more necessary to preserve order. Such economists and political scientists viewed individuals and organisations that construct rule systems or conform to rules as pursuing their self-interests – as behaving instrumentally and expediently. Many works in economics emphasises the costs of regulation. Agency theory stresses the expense and difficulty entailed in monitoring performances relevant to contracts, whether implicit or explicit, and in designing appropriate incentives.

3.5.2 The normative pillar

The normative element of institutions contains rules that introduce a prescriptive, evaluative, and obligatory dimension into social life. Normative rules comprise of both values and norms. Values are conceptions of the preferred or the desirable, together with the construction of standards to which existing structures or behaviours can be compared and assessed; whereas norms specify how things should be done: they define legitimate means to pursue valued ends. Normative systems define not only goals or objectives, but also designate appropriate ways to pursue them. While values and norms are applicable to all members of the society, there are also group-specific normative rules, namely roles: conceptions of appropriate goals and activities for specific individuals or social positions. Social roles are templates for particular types of actors and scripts for action. Roles can be formally constructed – as it is in the case of specified right and responsibilities of a specific position in an organisation – and can also emerge informally through human interaction over time. Roles arise as common understandings develop that particular actions are associated with particular actors. Roles develop when repetitive patterns of action gradually become habitualised and objectified.

Values, norms, and roles are not simply anticipations or predictions, but prescriptions or normative expectations on how specified actors (focal actors) are supposed to behave. These expectations are held by other actors of the society and thus are experienced by the focal actors as external pressures. Further, these normative rules become internalised by the actors albeit to varying degrees. Normative systems also both constrain and empower social actions, as they confer rights and responsibilities, privileges and duties, licenses and mandates. The ‘monitoring’ of conformity or violation involves self-evaluation (internalised): heightened remorse and/or effects on self-respect. Such emotions provide powerful inducement to compliance. Monitoring can also be imposed by others (morally governed).

Norms can also evoke strong feelings, but different to those in connection with rules and regulations. Trespassing of norms causes shame or disgrace; whereas exemplary behaviour brings pride and honour.

The normative conception of institutions was embraced by most early sociologists like Durkheim, Parsons, and Selznick, because they examined kinship groups, social classes, religious systems, and voluntary associations, where common beliefs and values are more likely to exist and constitute an important basis for order.

3.5.3 The cultural-cognitive pillars

The cultural-cognitive⁸ pillar deals with the cognitive dimensions of human existence: the internal, subjective interpretative processes that are shaped by external, objective cultural frameworks. Each individual – thus subjective – possesses a cognitive dimension that contains a collection of internalised symbolic representations of the world. The same symbolic representations are in the same time also perceived by other individuals – thus objective – and exist externally to individual actors in the collectivity. These cultural elements vary in their degree of institutionalisation – the extent of their linkage to other elements and the degree to which they are embodied in routines or organising schema. The cultural-cognitive element is equivalent with the “O” in the “S-O-R” model advocated by Markus et al. (1985). The internal cognitive framework in the organism (O) that mediates between the external world of

⁸ The hyphenation of ‘cultural’ and ‘cognitive’ explicitly recognizes the intimate, inseparable influence of cultural frameworks in shaping the processes in human ‘cognition’.

stimuli (S) and the response of the individual organism (R). Cognitive frames – or alternatively termed ‘patterns of thinking, feeling, and acting’; ‘software of the mind’ – enter into the full range of information-processing activities, from determining what information will receive attention, how it will be encoded, how it will be retained, retrieved, and organized into memory, to how it will be interpreted, thus affecting evaluations, judgments, predictions, and inferences.

This pillar emphasises the importance of symbols and meanings: symbols – words, signs, and gestures – shape the meanings we attribute to objects and activities; whereas meanings arise in interaction and are maintained and transformed as they are employed to make sense of the ongoing stream of happenings. Berger (1981, p. 31) summarised: “Every human institutions is, as it were, a sedimentation of meanings or, to vary the image, a crystallisation of meanings in objective form”. This takes us to Max Weber’s central premise: an action is regarded as social only to the extent that the actor attaches meaning to the behaviour. To understand or explain any action, the analyst must take into account not only the objective conditions, but the actor’s subjective interpretation of them. A cultural-cognitive conception of institutions stresses the central role played by the socially mediated construction of common framework of meaning (Scott 2008, p. 59).

Compliance occurs in many circumstances because other types of behaviour are inconceivable; routines are followed because they are taken for granted as ‘the way we do these things’.

The affective dimension of this pillar is expressed in feelings ranging from the positive affect of certitude and confidence to the negative feelings of confusion or disorientation. Actors who align themselves with prevailing cultural beliefs are likely to feel competent and connected, whereas those who are at odds are regarded as clueless and crazy.

The cultural-cognitive elements of institutions are mainly represented by anthropologists like Geertz and Douglas; sociologists like Berger, Goffman, and Meyer; and organisational scholars like DiMaggio, Powell, and Scott.

3.5.4 Some other important elements and properties of institution

Social activities. Apart from the three pillars as the central building block, institutions also encompass associated social activities or actions. Social activities are required to produce and sustain institutions or, in other words, institutions are inhabited by people and their interactions. Isolating institutions from the individuals dwelling in them is erroneous since we gain

empirical access to institutions by inspecting events and observing individuals; not by arranging abstracted entities into unified patterns.

Resources. Resources are also considered as an important element of institution. Any conception of social structure should underline the importance of including both material and human resources, since these are needed to sustain institutions. If rules and norms are to be effective, they must be backed with sanctioning power; otherwise they are abandoned. Moreover, possession over and/or access to certain resources are frequently the prerequisite to obtaining power like in the case of asymmetry of market/economic power on account of uneven distribution of resources.

Stability (state) and change (process). Institutions are durable social structures that are relatively resistant to change. They tend to be transmitted across generations, to be maintained and reproduced. Institutions by definition are the more enduring features of social life giving solidity to social systems across time and space. However, although institutions function to provide stability and order, they undergo change, both incremental and revolutionary. Thus, inquiries should not only into institutions as a “property” or state, but also as a “process”.

Legitimacy. To survive and thrive institutions also need legitimacy apart from human and material resources (Scott 2008, p. 59). Legitimacy is conceived here as social acceptability and credibility resulting from generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within the prevailing institutional frameworks. Frequently legitimacy is associated with power. Legitimacy requires support from certain (external) power or authorities like e.g. the state. Weber (1922/2005) argued that power becomes legitimated as authority to the extent that its exercise is supported by prevailing social norms, whether traditional, charismatic, or bureaucratic.

The three pillars elicit three related, but distinguishable bases of legitimacy (Scott 2008, p. 61). The regulatory pillar emphasises the conformity to rules, relevant legal or quasi-legal requirements. The normative builds on more internalised, deeper, moral base with both intrinsic as well as extrinsic rewards as incentive to conformity. The cultural-cognitive underlines the compliance with a common definition of the situation, frame of reference, or a recognisable role or structural template. The cultural-cognitive mode is the “deepest” level because it rests on preconscious, taken-for-granted understandings. Legitimation reflects perceived consonance with relevant rules and laws, normative support, or alignment with cultural-cognitive frameworks.

Institutional levels. Institutions operate at multiple levels, from the world system, societies, social groups, interpersonal interaction, to internal cognitive processes in individuals. Institutional scholars in economics distinguish three institutional levels of rule and governance systems ranging from micro-, meso-, to macro-level. While Coase (1937) focused his inquiries into micro level of firm-level governance structure, Williamson (1991) scrutinised meso-level institutional analysis involving firms under a certain governance structure like hybrid organisational forms (franchising, alliance, etc.) and hierarchical structures (unified firms, multidivisional corporations, etc.). North (1990/2005), an economic historian, examined the macro-level of institutional analysis to account for the emergence and change of wider institutional frameworks, namely how cultural, political, and legal frameworks (“rules of the game”) affect economic forms (Scott 2008, pp. 27–30).

Parsons (1956) classified three distinctive institutional levels in an organisation: the technical, the managerial, and the institutional. The technical level is concerned with production activities; the managerial with control and coordination activities, procurement of resources, and disposal of products; and the institutional with relating the organisation to the norms and conventions of the community and society. Every organisation is a subsystem of “a wider social system which is the source of the ‘meaning’, legitimation, or higher-level support which makes the implementation of the organisation’s goals possible” (Scott 2008, p. 24).

3.6 Analytical framework: Methodological individualism

Building on the omnibus definition and concept of institution as elaborated in the previous sub-chapter, it is now the task to define the analytical framework for operationalising the theoretical framework into the empirical research process. Acknowledging that both objective institutional framework and subjective individuals are the key elements of institutional theories, the analytical framework for this research follows the approach of methodological individualism. Nevertheless, since methodological individualism itself is also a contentious concept, it is indispensable to first elucidate the history of development of this term and various understandings behind it. A clearly stated definition of this term is given at the end of the discussion. Then, building on this approach the Macro-Micro Model of Coleman (1990) and Esser (1999) is delineated in brief.

3.6.1 History of development and definition

The term ‘methodological individualism’ was coined by Joseph Schumpeter (Hodgson 2007, pp. 211–214; Udehn 2002, p. 484). This term first appeared in German – ‘*Der methodolo-*

gischer Individualismus’ – as a chapter title in the book published by Schumpeter in 1908 ‘*Das Wesen und der Hauptinhalt der theoretischen Nationalökonomie*’. One year later it appeared in English in the article ‘On the Concept of Social Value’ published in the Quarterly Journal of Economics. Schumpeter employed this term to make a distinction between political and methodological individualist. For Schumpeter methodological individualism simply means that individual is the starting point for describing economic phenomena, for all things are demanded, produced, and paid for because individuals want them – irrelevant why individuals demand these goods. Thus, the term served rather as a method in theoretical economics than in sociology and should not be associated with many prominent versions of methodological individualism promoted after the Second World War that put the emphasis on the question why and how individuals take decisions and actions resulting in certain economic phenomena.

Notwithstanding the frequent appearance of the term methodological individualism in contemporary literatures of social sciences, there is no consensus on its sense and usage (Hodgson (2007, p. 212; Udehn 2002). Therefore, the clarification of the definition and the notion behind these two words is of the uttermost importance. Containing the word ‘individualism’ this term has indeed the notion that the methodology of explaining social phenomena should be based on individuals with their actions and decisions. However, it is first important to further specify what precisely the *explanantia* of methodological individualism is: are social phenomena to be explained entirely in terms of individuals alone or partly in terms of individuals plus other factors such as the interactive relations between individuals and social institutions? Based on this difference in *explanantia* Udehn (2002, p. 500) distinguished two major versions of methodological individualism. Proponents of strong methodological individualism put individuals as the only exogenous variable in their model; whereas those of weak methodological individualism include interaction between individuals and social institutions. The development of the latter makes the traditional opposition and exclusive separation between individualism and institutionalism/holism difficult.

Against the strong version of methodological individualism Hodgson (2007) argued that reducing explanation only to individual is untenable. First, institutions do matter in explaining collective phenomena because they play influential role of shaping individuals:

Individual choice requires a conceptual framework to make sense of the world. The reception of information by an individual requires a paradigm or cognitive frame to process and make sense of that information. The acquisition of this cognitive apparatus involves processes of socialization and education, involving extensive interaction with others. [...] The means of our under-

standing of the world is necessarily acquired through social relationships and interactions. Cognition is a social as well as an individual process. Individual choice is impossible without these institutions and interactions. (Hodgson 2007, p. 218)

Second, despite the fact that the proponents of strong methodological individualism do not consider institution as *explanantia*, they would still have to account for the existing institution shaping the individuals. These individuals, in turn, are also shaped by the previous institutional set-up which is also partly a result of purposive actions from individuals, and so on. Then, where should the analysis stop? This infinite regress, in which neither individual nor institutional explanatory factors are predominant over each other, brings us to the puzzle ‘which one comes first, the chicken or the egg?’ (Hodgson 2001, pp. 249–252). Acknowledging that there is no ‘institution-free’ nature of individuals, each social analysis must always and unavoidably start from individuals plus some institutions, however primitive. Both of these arguments are in line in particular with the cultural-cognitive pillar of institution as it is elaborated in the Sub-chapter 3.5.3.

Based on these arguments, the analytical framework of this research follows the definition of the weak methodological individualism, namely ‘an approach to explaining social phenomena in terms of individuals, their interaction and social institutions’. The discourse upon methodological individualism in this sub-chapter accentuates the importance of taking individuals with their actions, decisions, and interactions as one of the starting points in the empirical research stage. This necessity of integrating both *explanantia* into a model useful and applicable in empirical research leads to the Macro-Micro Model that was proposed by Coleman (1990) and then further extended by Esser (1999).

Table 3-1 Methodological individualism: A problematic label

Although the advocates of the weak version of methodological individualism have already given clear definition and convincing arguments to abandon the too reductive, narrow view of the strong methodological individualism, Hodgson criticised the term itself: If social institutions and structures deserve the equal importance of being explanatory factor as individuals, why still call the term ‘methodological individualism’? Why not ‘methodological structuralism’ or ‘methodological institutionalism’? All of these terms are misleading, for each analysis has to start from both structures/institutions and individuals.

The term ‘institutional individualism’ proposed by Joseph Agassi can better reflect the notion. However, it is to notice that ‘institution’ receives here the adjective status; whereas ‘individual’ has the prestige status of being the noun. Why not call it ‘individualistic institutionalism’? No reasons and argumentations can give the one primacy over the other.

Another critique is concerning the confusion over the term as being ‘methodological’ or ‘ontological’ statement. Following Udehn, methodological individualism is a principle, rule, or programme about how to define collective concepts, explain social phenomena, and/or reduce macro to micro. Many advocates of methodological individualism, however, state it as an ontological thesis, namely that the cause, nature, and existence per se of social phenomena is individual; as it is stated in a well-known citation “There is no such thing as society”.

Source: own compilation based on Hodgson (2007) and Udehn (2002)

3.6.2 Macro-Micro Model by Coleman and Esser

Udehn (2002, pp. 492-496, 500-501) characterized Coleman's version of methodological individualism as:

- i. **a more objectivist approach** focusing on social institutions and structures as external constraints upon behaviour; whereas the subjectivist approach focuses more on preferences and beliefs of individuals. Hence, the former builds upon simple assumptions about individual behaviour (thin psychology) while the latter relies on a richer psychological assumptions.
- ii. **a heuristic device or research programme** orientated toward practical, empirical application. This stands in opposition to those employing methodological individualism as an a priori, universal, normative principle in social scientific research – a view common among philosophers.
- iii. **structural individualism**, since it clearly distinguishes between natural persons and position/role they occupy as corporate actors. These positions and not the persons per se are the elements of the social structure of corporate actors. Thus, relation between corporate actors is between positions rather than persons. Another point that distinguishes Coleman's theoretical position is his insistence on 'social structure' as an additional, specific exogenous variable. 'Social structure' here is employed in a narrow sense i.e. to denote a set of interdependent, interrelated positions that determine the pattern of interaction between individuals occupying certain position prior to the personal encounter itself⁹. Although typically this variable appears, if at all, as endogenous variable or consequence, Coleman considers this in the antecedent of social scientific explanation and thus pre-defines any interaction between individuals. In sum, the explanata of social phenomena according to Coleman are individuals, social institution, and social structure.

Coleman's model of methodological individualism, entitled the 'Macro-Micro Model', is characterised by two aspects. First, it makes a clear distinction between variables on macro and micro level. Macro level variables include phenomena observed in the society such as social structure, collective action of individuals, and so forth; whereas micro level variables

⁹ The distinction between 'social institution' and 'social structure' refers specifically to this passage. In other parts of this research both terms are used interchangeably.

are individuals and firms/corporate actors. Second, according to this theorem the correlation of two collective variables in macro level cannot be drawn directly. Rather, it can only be explained through referring back to the actions, orientation, decision, and behaviour taken by individuals in micro level. The example below will further explain the model.

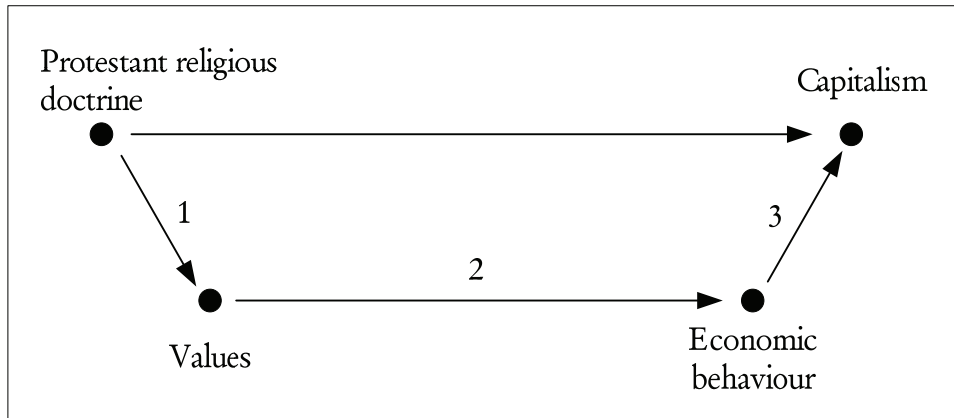


Figure 3-4 Macro- and micro-level propositions: Effects of religious doctrines on economic organisation

Source: Coleman (1990, p. 8)

For the introduction of the Macro-Micro Model Coleman (1990) took Weber's famous postulate 'the Protestant Ethic and the Spirit of Capitalism' to explain his propositions (see Figure 3-4). Coleman argued that the doctrine of Protestant religion (a macro variable) is not the direct cause for the dissemination of capitalism in the Occident (also a macro variable); but rather it has affected the individuals adhering to the doctrine (a micro variable). The doctrine of Protestant religion contains certain values that were then adopted by its adherents as ideal values for their life, in particular towards work life or work ethic (arrow 1). The adoption of these values had resulted in certain changes of orientation to economic behaviour (arrow 2). These new orientation helped bring about capitalist economic organisations in the society and the rise of capitalism (arrow 3)¹⁰.

Esser (1999) generalised the method of Coleman's Macro-Micro Model (see Figure 3-5) and complemented the arrows with following terms:

¹⁰ Cf. Weber (1905/2005)

- i. **Arrow 1: Logic of Situation** is defined as typifying description of the situation by actors. In sociology logic of situation typically refers to the contextual effect of social situation toward the orientation and action of individuals. To analyse this contextual effect, one needs to employ bridge hypothesis to bridge between collective and individual levels.
- ii. **Arrow 2: Logic of Selection** describes how individuals come to their decision. This can be explained by several theoretical models: Esser prefers to use *Wert-Erwartungstheorie* or Subjective Expected Utility (SEU), Rational Choice Theory, Game Theory, Utility-Maximising Behaviour, Bounded-Rationality Theory, and so forth.
- iii. **Arrow 3: Logic of Aggregation** describes how individual actions can lead to certain social phenomena on collective level. However, here it is important to acknowledge the so-called “aggregation problem” – as it is frequently expressed by the notorious statement “the whole is more than the sum of the parts”. The term ‘aggregation’ does not mean merely the adding-up of each individual action; instead, it refers to a more complex combination of interdependencies between individuals and existing institution producing a systemic outcome – all which is to be explained (Udehn 2002, pp. 494–495).
- iv. **Arrow 4: Indirect correlation between ‘Social phenomena 1’ and ‘Social phenomena 2’** is depicted by broken line to explicitly state that the correlation between these variables is indirect and can only be explained through the micro level. For Esser this model serves rather as an orientation for individualistic modelling and is thus very useful for practical researches.

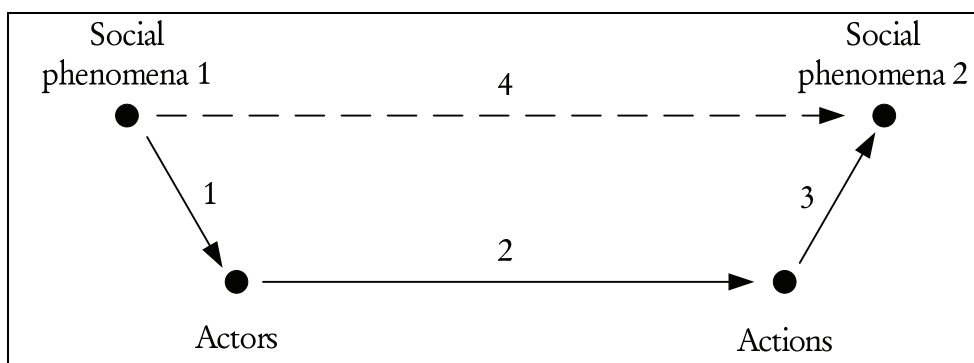


Figure 3-5 Macro-Micro Model by Coleman and Esser

Source: Miebach (2006, p. 398)

One fundamental result Esser achieved in his research applying Macro-Micro Model is that empirical processes can only be described and explained adequately when the time dimension of those processes are taken into consideration (Miebach 2006, p. 429). Consequently, the

Macro-Micro Model can be repeatedly applied to explain the gradual changes of macro variables over time.

Further extension of Coleman's Macro-Micro Model is the deliberation of meso level between the macro and micro level (see Figure 3-6). Meso level is of particular interest when the model involves more than one actor category – say “Actors A” and “Actors B” – and when the interactions between these actors are influential for explaining the macro variables. The meso level reflects the interaction system of the different actors – the “initial condition” and “end condition” – and is in turn explained on the individual level of the different actors – “Actors A or B” and “Actions by actors A or B”.

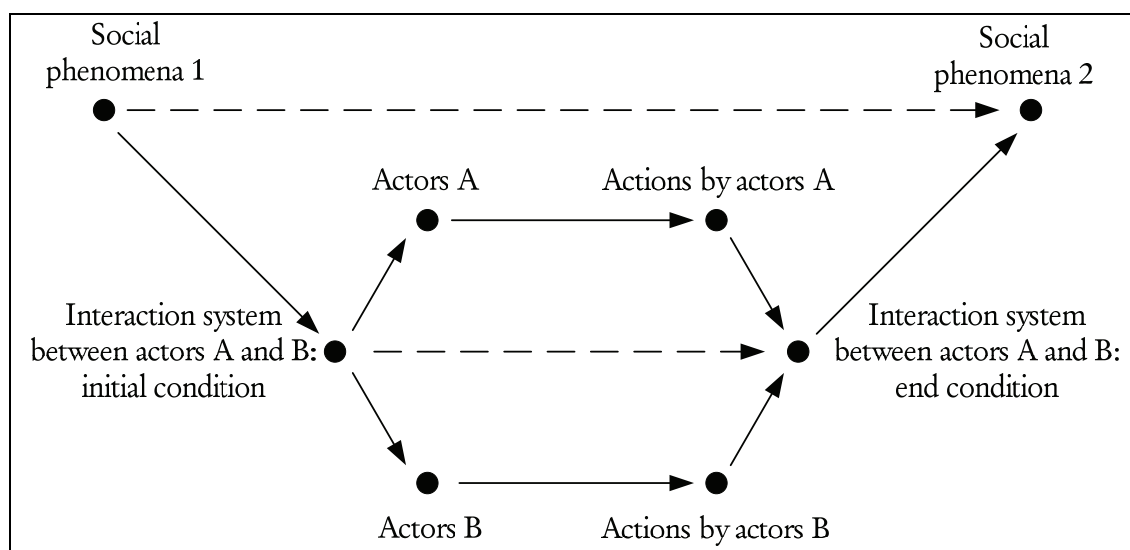


Figure 3-6 Extension of Macro-Micro Model by Esser: Meso level in multi-level model

Source: adapted from Miebach (2006, p. 430)

4 Research Process and Design

This chapter elucidates the whole research process and design. The first sub-chapter deals with the characterisation of the current research by delineating its outer boundaries: point of departure, approaches employed, and structures followed. Being empirical in nature this research uses data in the form of observable, real-world experience, evidence and information. How the empirical processes are organised and what model of research is followed is the main concern of the subsequent sub-chapter. Finally, this chapter is closed by a short description of how the actual empirical processes are designed and carried out throughout the research phases.

4.1 Research characteristics

In order to understand the characteristics of this dissertation, it is purposeful to first gain insight into why and how this study was initiated. The point of departure in this dissertation is the conclusions drawn by the author in his previous research on the application of value chain approach in development cooperation Nugraha (2007, pp. 53–59). Whether a value chain upgrades itself or develops through external facilitation is not solely a matter of identifying market opportunities and exploiting them. Instead, “it is evident that the dysfunctional governance structures¹ [of a value chain] ... are the ultimate problem which nullifies all [value chain] development efforts”.

The governance of the value chains indeed plays a significant role in determining whether an upgrading takes place or not and how it proceeds. Another remarkable conclusion made was that such value chain approach, including its discussion on the governance, focuses so heavily on economic or market aspect as to neglect the importance of socio-cultural factors. This is due to the fact that most value chain approaches rest upon ‘*homo oeconomicus*’ – neo-classical economics’ underlying assumption about human behaviour. The generalisation of such pre-assumption, however, should be put into question. While it may be applicable to chain operators of highly commercialised, globally operating value chains; economic decisions and actions of individuals in rural areas of developing countries – that mainly are pre-

¹ The term ‘governance structures’ used here follows the definition of Kaplinsky et al. (2001). See Sub-chapter 2.5.

dominated by economic activities in agricultural sector – are influentially shaped by the prevailing socio-cultural context.

The analysis of literatures on value chain governance in Chapter 2 has found out that hitherto the discussions on the concept of value chain governance concern mainly global value chains operating cross country borders. As a consequence, the perspective taken in such studies is from the large enterprises or multinational companies. Also, the discussed concept is underpinned by theories drawn on industrial organisation theory, management theory, and transactions cost theory. These findings imply that until now there is not yet any attempt to discuss and explain the governance of value chains in different context, such as in developing countries in which completely different actors and structures are in place. In contrast to large multinational companies operating in global markets with more sophisticated technological status and more complicated market arrangements, value chains in rural areas of developing countries are predominated by economically weaker social groups – or frequently termed micro, small, and medium enterprises (MSMEs) – with their interactions to large extent on local, regional, or national markets. This specific type of economic actor is, of course, situated in a disparate institutional setting and thereby necessitates a different theoretical approach. On account of the novelty of the research object this study embraces an exploratory view.

The endeavour to introduce institutional perspective into the research on value chain governance also entails a more comprehensive approach. The theory of institution, as it is elucidated in Chapter 0, presents a wide range of insightful aspects – and thus complex – that can help to reveal important determining factors in value chain governance and in its relation with value chain upgrading. In other words, the theory of institution considers not only economic factors as the possible key factors in value chain upgrading, but also other aspects like rules, norms, habits, culture, and so forth. Even the dynamic interaction between these factors is also subject to explanation. Furthermore, this institutional context cannot be separated from the individuals or the actors of value chain embedded in it. These individuals, influencing and influenced by the institutional structure, are indeed the focal point in explaining the collective phenomena. Thus, questions that may arise at this point are: Which factors are relevant and which are not? How are they interrelated to each others? How do individuals behave in such context? Given this complexity it is more appropriate to inquire into an elusive object of research using a qualitative approach, as it is pointed by Punch (2005):

Very often, the point of a qualitative study is to look at something holistically and comprehensively, to study it in its complexity, and to understand it in its context. These points correspond

to three criticisms of quantitative social research: that it is too reductionist in its approach to the study of behaviour, thereby losing sight of the whole picture; that it oversimplifies social reality, in its stress on measurement; and that it strips away context from the data. (Punch 2005, p. 186)

Inasmuch as explanatory propositions on the relation between the value chain governance and value chain upgrading are the goal of this study, the characteristics of value chain governance and the phenomena of value chain upgrading in different areas – i.e. the macro variables – are to be described first. Then, these descriptions are analysed using the theory of institution to discover the causal connections between those macro variables by referring back to the actions and decisions taken by individuals in different parts of the value chain – i.e. the micro variables. By defining the causal connections and abstracting these into more general statements, explanatory propositions can be drawn regarding value chain governance and value chain upgrading. These explanatory propositions will have predictive value, albeit to limited extent, if they are transferred to other research contexts. In this regard, the research has both descriptive and explanatory character.

Although the notion of value chain governance is not new, the existing concepts are not yet comprehensive and holistic since they virtually neglect social or institutional aspect. Hence, the endeavour to introduce this new aspect into governance concept can be considered as a theory generation.

The research steers a middle course between pre-specified and unfolding structure² with a tendency toward the latter. This applies to research questions, design, and data. Prior to the empirical work there are neither specific research questions about what exactly the study is inquiring nor pre-determined research design nor fixed categorisation of data to be collected. But instead, this research starts with some general questions that are derived from author's previous experience in value chain research and from existing discussions on value chain governance (see Chapter 2) in the light of some fundamental principles highlighted in the theoretical framework (Chapter 0). These guiding questions, then, develop into more specific research questions as the empirical work proceeds. Regarding the research framework this study also does not start with a *tabula rasa*. Instead, as Chapter 2 highlighted the importance to view governance of value chain from institutional perspective, Chapter 0 delineates the

² Punch (2005, p. 25) views the distinction between 'pre-specified' or 'tight' and 'unfolding' or 'loose' research structure not as a dichotomy, but rather as a continuum where various in-between positions are possible.

theoretical and analytical framework to explain the phenomena of value chain governance in relation with value chain upgrading. Building on this framework an *a priori* but provisory data categorisation is defined. Yet, here it is important to emphasise that both the research framework and data coding are not rigid or unchangeable; they serve rather as an orientation in empirical work and give much room for the infusion of particular knowledge and different data wording emerging in the research process.

4.2 Model of research process and design

Taking the explanations above as the point of departure it is now important to systematically construct the research process. The explication of the research process is useful for organising and structuring the research efforts around the research question. The organisation of the research process follows the model delineated by Punch (2005, pp. 32–43). This simplified model of research includes two research stages: the pre-empirical and empirical stage (see Figure 4-1).

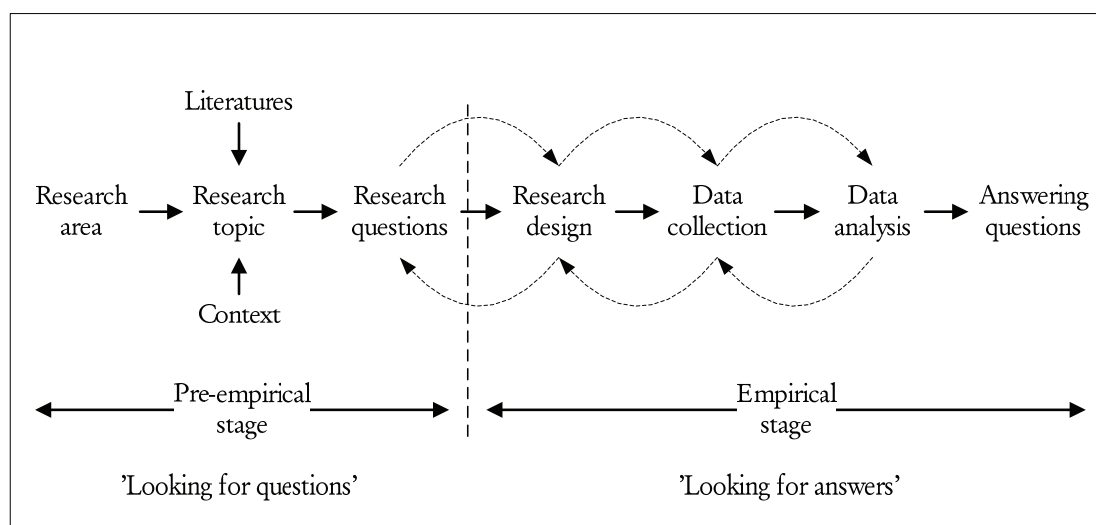


Figure 4-1 Simplified model of research process

Source: modified from Punch (2005, p. 40)

4.2.1 Pre-empirical stage

The pre-empirical research stage has the main objective to prepare the research so as to come to certain research questions – whether they are still in general terms or already exhibits a high degree of specificity. Identifying research questions is the centrepiece of a research process because they, as pointed out by Punch (2005, pp. 36–37):

- organise the project, and give it direction and coherence;

- delimit the project, showing its boundaries;
- keep the researcher focused during the project;
- provide a framework for writing up the project; and
- point to the data that will be needed.

It is important here to distinguish between general and specific research questions. General research questions serve as guidance in discerning what is the research trying to find out, but are not specific enough to be answered. Specific research questions ideally follow from the general ones, provide direction for the empirical stage, and are themselves the questions to be answered by the research. One may work deductively from general to specific questions, while another uses inductive approach by starting with some specific questions and then work back to more general questions.

Punch's model of research process also explicitly differ research questions from research area and topic. Research area refers to

a general field of inquiry, within which we can identify different topics. A topic is a theme within the area, but is still very general. Within a topic, therefore, we can identify many research questions, general and specific. Thus there is a hierarchy of concepts [with increasing degree of specificity]: research area, research topic, general research questions, specific research questions, and data collection questions. (Punch 2005, p. 33)

Again, in this hierarchical concepts the researcher can start with prespecified, specific research questions and work towards more abstraction; or start from a broad research area and work into more specific topic and questions. Which of these approaches is used, or even if these approaches are combined, is not the main concern. Rather, the development of research questions, their placement into appropriate research area and topic, as well as their ordering into general and specific questions is the fundamental issue.

The selection of research area and topic may come from any source: taxonomy or classification in existing literatures, or even particular context like "personal experience, curiosity based on something in the media, the state of knowledge in a field, solving a problem (often associated with professional experience), social premiums, personal values and everyday life" (Punch 2005, p. 33).

4.2.2 Empirical stage

While the main objective of pre-empirical stage is to define the research questions, the main concern of empirical stage is how to come to the answers. As illustrated in Figure 4-1 this stage consists of several consecutive steps from research design, data collection, data analysis,

to answering questions. The typical, traditional workflow would follow these consecutive, discrete steps (illustrated by short arrows with solid line). However, there are also researches that would need to recurrently go back and forth through these steps (illustrated by curve arrows with broken line), as it in the case of researches with unfolding structure. Even certain research design like grounded theory requires that the researcher proceeds in a continuous cycle of data collection/data analysis – a principle called theoretical sampling. Commencing with some initial questions the researcher collects a first set of data that will then be analysed. Based on the results of this analysis a second set of data are collected, analysed, and so forth. This process is repeated until theoretical saturation is achieved, that is when new data convey no new theoretical elements and confirms the already discovered theoretical elements.

The first step in the empirical stage is to specify research design. Research design refers to a plan that situates the researcher in the empirical world and connects the research questions to data (see Figure 4-2). There are four aspects included in a research design research strategy, research framework, research object, and tools and procedures used for data collection and analysis (Punch 2005, pp. 62–65).

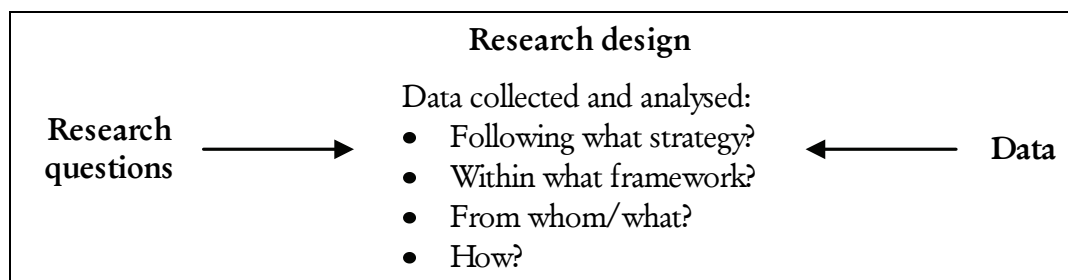


Figure 4-2 Research design: Connecting research questions to data

Source: Punch (2005, p. 63)

The term ‘strategy’ refers to “the reasoning or the set of ideas by which the study intends to proceed in order to answer its research questions” (Punch 2005, p. 63). In qualitative research there are several alternative strategies like case study, ethnography, grounded theory, action research, or a combination of these. If combination of strategy is employed, then it should be clear what elements of each strategy are used in the combination.

With the term ‘framework’ Punch (2005, pp. 37, 53, 64) refers to ‘conceptual framework’: the conceptual status of the things being studied, and their relationship to each other. Conceptual framework may be developed ahead of the research – as it is frequently found in quantitative research with prespecified structure – or emerge during the research progress.

The third and fourth aspect of research design refers directly to the next steps in the research process, namely data collection and data analysis (see Figure 4-1). The explicit statement of these aspects in a research design encourages researchers to think about the method they are going to use in the empirical processes of data collection and analysis, as well as to judge whether this fits to the research strategy and framework. Research object concerns the ‘who or what will be studied’. In quantitative studies research object refers to the sampling for the research; whereas in qualitative ones it reflects the source of information: transcription material of interviews and observations, documentary data, etc.

As opposed to quantitative studies that appear relatively methodologically unanimous regardless their internal technical debates, qualitative studies are characterised by a great diversity (Punch 2005, p. 134). This diversity reflects not only contention about how to approach and analyse data, but also about the overarching paradigm. The method of data collection through interview, for example, can be classified into structured, semi-structured, and unstructured interview; or into personal and group interview. The same classification also applies to observation method. Another possible classification for observation method is the differentiation between participant observation and ethnographic observation. The ways of analysing data also show a wide range of variety (Punch 2005, pp. 191–196): analytic induction, the Miles and Huberman framework for qualitative data analysis, the groundbreaking grounded theory, and some others. Some of these are frequently interconnected, overlapping, and complementary; while others are sometimes mutually exclusive.

4.3 Actual research process and design

4.3.1 Research area and topic

The actual research process is described here using Punch’s model of research process as delineated in Sub-chapter 4.2. The point of departure in Sub-chapter 4.1 helps to demarcate the general questions, topic, area of the research, as well as the context of the inquiry and the literatures consulted in the pre-empirical stage. This research started with two general research questions: First, how can the concept of value chain governance be extended by incorporating socio-cultural factors into it? Second, how are the relation between prevailing value chain governance and value chain upgrading explained? The research topic is, thus, value chain governance and value chain upgrading; whereas the research area can be classified into value chain research.

4.3.2 Research context

The context of the study takes the setting of dairy value chains in Indonesia. There are in sum 3 dairy value chains to be studied: in Lembang, West Java; Pasuruan and surrounding areas, East Java; and in Boyolali, Central Java. The latest has a specific context in this research: During 2006-2009 the researcher had the opportunity to work as professional staff in a development project called Regional Economic Development (RED) conducted by *Gesellschaft für technische Zusammenarbeit GmbH* (GTZ GmbH). Entrusted with the implementation of project instrument ‘value chain promotion’, the researcher had the responsibility to direct the value chain promotion in Boyolali, Central Java, in close cooperation with local stakeholders. In this context the information gathered through action research, in which the researcher played the role both as observer and participant in intensive interaction with the local stakeholders. The inquiries made were directed toward practical problem solving.

4.3.3 Literatures

The literatures consulted in the pre-empirical stage are those dealing with global value chains and the application of VCA in developing countries. Since at this stage the general research questions were already clear, the review was focused particularly on the topic of value chain governance and upgrading, as they are elaborated in Chapter 2.

4.3.4 Research strategy

The research strategy follows mainly the strategy of case study (see Table 4-1). This strategy fits the complex, exploratory characteristic of the research. The case consists of three small cases of dairy production centres in three different locations, namely in Boyolali, Central Java; Pasuruan, East Java; and Lembang, West Java. Each case has a visible system boundary: In each location dairy farmers are producing exclusively for one cooperative, so that the three cases exhibited different system. The strategy of using comparative cases to explain why some dairy production centres thrived while others stagnated provide greater opportunity to cross-check and verify the conclusions made for each case. To differentiate these systems the term ‘lesser-performing interaction system’ and ‘higher-performing interaction system’ is introduced here. The term ‘interaction system’ signifies that dairy value chain is composed of dairy farmers, cooperatives, and dairy processing industries including their interdependent relations.

Table 4-1 What is a case study?

<p>The basic idea of case study is that one or perhaps small number of cases will be studied in detail, using whatever methods seem appropriate. The general objective is to develop an understanding of that case as much as possible. Thus, case study aims to understand the case in depth, recognizing its complexity and context. It also</p>
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has a holistic focus, aiming to preserve and understand the wholeness and unity of the case. Therefore, case study is more a strategy than a method.

While there are various definitions of ‘case study’, all these highlight four main characteristics of case studies:

1. The case is a ‘bounded system’: typically the case is demarcated to its context. If it is not, then the researcher needs to identify and describe the boundaries of the case.
2. The case is a case of something: it is necessary to explicitly state why the case is a case and what the case is about. By doing this the researcher will be able to identify and focus on the unit of analysis – whether it is individuals, their attributes or interaction, collectivities, state, and so forth.
3. The case is a holistic case: while the case is approached and studied in its wholeness, unity, and integrity; specific focus is still required since not all things can be studied at the same time.
4. The case uses multiple data sources and methods: studying the case in its naturalistic setting, case studies may use observations, interviews, narrative reports, but also questionnaires and numerical data.

Source: Punch (2005, pp. 142–148)

4.3.5 Research framework

While for Punch (2005) the term ‘framework’ refers to ‘conceptual’ framework. This research, however, differentiates further between ‘theoretical’ and ‘analytical’ framework. The former refers to the more abstract and fundamental theoretical structure circumscribing the scope of study, in which the explanation of the research is grounded; whereas the latter describes the way or model how the theoretical framework is operationalised in empirical work. The theoretical framework is based on the overarching theory of institution proposed by Scott (2008) (see Sub-chapter 3.4) by considering some other valuable conceptions about institution posited by scholars in economics, political science, and sociology. The analytical framework employs the Macro-Micro Model advanced by Coleman and Esser (see Sub-chapter 3.6). Here, there are two different variables to be examined. The macro variables refer to the governance of the respective value chain and the collective phenomena of value chain upgrading. The micro variables refer to the actors in the selected value chains that are comprised of operators in different links/stages, internal supporting institutions, and external supporting institutions³.

The question ‘what or who will be studied’ helps to define and delimit the research object. In relation with the first macro variable ‘governance of value chain’, the study is directed toward the institution of the value chain. The institution is inquired into using information about the

³ The terms ‘actors’, ‘operators’, and ‘supporting institutions’ of value chain follow the terminology used in the context of value chain promotion as described in Springer-Heinze (2007a).

objective existence of regulations, norms, and culture. The second macro variable ‘value chain upgrading’ is described based on the upgrading typology as defined by Kaplinsky et al. (2001, p. 38) (see Sub-Chapter 2.1). The causal links between these macro variables are drawn on the subjective perception of VC operators situated in the interaction system with other VC operators and the respective action they take.

4.3.6 Data collection

As the research strategy apply case study which uses all sort of data available to gain in-depth understanding of the case, the data collected are in various forms: minutes of meetings; project progress reports; consultancy reports; notes taken in observation during training events; focus group discussions and workshops; and interviews with VC operators (see Table 4-2) and experts (see Table 4-3) on specific topic. This applies particularly in the main case of dairy value chain in Boyolali. In the other cases the method of data collection is mainly observations and interviews both individually and in group. The identity of persons interviewed is kept confidential since they may disclose sensitive information.

Table 4-2 List of interviewed VC operators

Category of interviewee	Interviewee	Number of persons interviewed
Dairy cooperatives (Coop)	Cooperative leader, treasurer, manager, extension staff	15
Dairy farmers (Farmer)	Dairy farmers	6
Dairy processing industries (DPI)	Director, manager, field inspector, consultant	7

Source: own compilation

In order to create more naturalistic setting during interviews, the local language Javanese is used in Central Java particularly for older dairy farmers, since many of them do not use Indonesian as daily language, so that the use of language not common in their daily life would bring distortion to the information inquired into. Interviews with other value chain actors and with experts having higher academic background are conducted in Indonesian, English, and German. The interviews are then transcribed and translated into English. The method of data collection also follows the principle of theoretical sampling of grounded theory.

Table 4-3 List of interviewed experts

Expert interview	Description
Exp 1	Expert on tropical dairy farming
Exp 2	Expert on artificial insemination

Exp 3	Expert on agricultural extension
Exp 4	Expert on value chain promotion
Exp 5	Expert on cooperative in Indonesia
Exp 6	Expert in entrepreneurship for MSMEs
Exp 7	Local government officer
Exp 8	Expert in communication and training method
Exp 9	Expert in community development

Source: own compilation

4.3.7 Data analysis

Collected data are then analysed using the framework as delineated by Miles et al. (1994) (see Appendix 1).

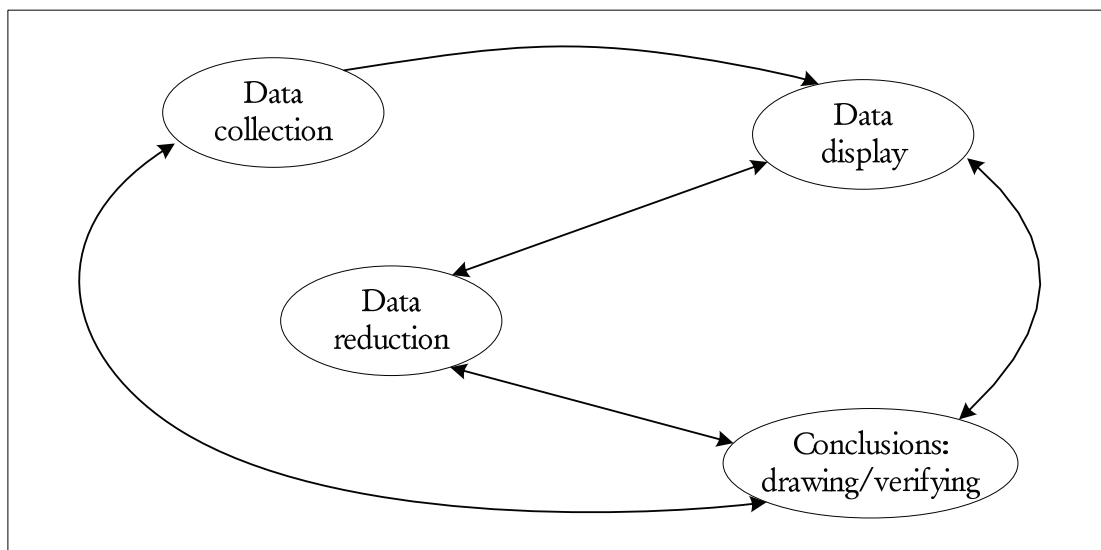


Figure 4-3 Data analysis: Concurrent and interactive model

Source: Miles et al. (1994, p. 126)

This method of data analysis encompasses, as illustrated in Figure 4-3, three main components: data display, data reduction, and drawing / verifying conclusions. These three components are operated throughout the empirical process. This method is basically similar to the method for data analysis used in grounded theory; although the terms used are slightly different.

5 Dairy Industry in South-East Asia

Chapters 5, 6, and 7 deal with the descriptive analysis of the dairy value chain. Starting with an overview information about Indonesia, Chapter 5 briefly characterises the overall situation of dairy sub-sector in SE-Asia with particular reference to regional aggregate and national aggregate of some selected countries. For this purpose, first, a snapshot of the current situation will be delineated using some of the most important aggregate parameters characterising the dairy industry. Second, the development of production, consumption, export and imports will be retrospectively examined and their changes over the last 45 years discussed in a concise manner. A particular emphasis is given on Indonesia's position on the regional level.

5.1 Indonesia: Country in brief

Indonesia is the largest archipelago in the world that has 17,508 islands sprawled over a total area of 1.9 million km² including the ocean waters. Sumatra, Java, Borneo, Sulawesi, and Papua are the main islands. There are 400 volcanic mountains – which 100 of them are active – that dot the islands of Indonesia. Situated on the equator and between two great bodies of water, i.e. the Pacific and Indian oceans, Indonesian has a humid tropical climate with an annual precipitation rate ranging from about 1,000 mm in Nusa Tenggara, to about 2,000 mm in the most of Java, to about 3,000 mm in mountainous regions; whereas the average annual temperature ranging from 25 to 27°C. Indonesian climate is characterised by two distinct monsoonal wet (October – April) and dry (April – October) seasons.

With around 227 million inhabitants (estimation for 2008; Data Statistik Indonesia 2009) Indonesia is the fourth most populous country in the world. Its population growth rate, i.e. 1.3% annually (2000-2005), is relatively modest in comparison to other developing countries. Unevenly distributed, around 60% of the total population dwells on Java which has only 7% of the total land area and thus resulting in a very high population density of around 1,000 people per km². Indonesia has the world's largest Muslim population, since approximately 85% of its total population adhere to Islam; whereas around 12% to Christianity and the rest to Buddhism, Hinduism, and other beliefs¹.

¹ There are different versions of statistic regarding this matter. The figures above are taken from the official country profile of the State Secretariat of Indonesia (Sekretariat Negara Republik Indonesia 2005).



Figure 5-1 Map of Indonesia

Source: Central Intelligence Agency (2009)

Under the national government the first level of sub-national administrative unit is the province level. Currently Indonesia has 33 provinces (*propinsi*), five of which have special status. The provinces are then subdivided into the second level of sub-national administrative unit called district² (*kabupaten*) and municipality (*kota*), which are further subdivided into subdistricts – the third level of sub-national administrative unit – (*kecamatan*), and again into the smallest administrative unit, namely village (*desa*) or commune (*kelurahan*).

Based on International Monetary Fund (2009), with a nominal Gross Domestic Product (GDP) of US\$ 512 billion in 2008 Indonesia ranks 19th in the world economy. The nominal GDP per capita amounts to US\$ 2,246 and thus ranks 116th most affluent of 170 countries in the world. According to Indonesian Central Bank the economic growth rate for 2008 was 6.1% (GDP) and during the last 5 years 5-6% (Bank Indonesia 2009). Although agriculture sector only accounts for 13.5% of the total GDP, 42.1% of the total labour force are employed in agriculture sector (Central Intelligence Agency 2009).

5.2 A snapshot of dairy industry in South-East Asia

² Another English translation for *kabupaten* is 'regency'.

Table 5-1 Overview of dairy industry in selected South East Asian countries in 2006

Country	Dairy cattle population ['000 head]	Production of fresh milk ['000 ton]	Consumption ³ of dairy products ['000 ton]	Imports of dairy products ['000 ton]	Exports of dairy products ['000 ton]
Indonesia	369	616 ⁴	2,212	1,806	210
Myanmar	1,434	883	985	102	0
Malaysia	90	38	1,199	1,443	282
Philippines	6	12	1,580	1,712	144
Thailand	275	826	1,845	1,266	247
Viet Nam	145	215	1,035	821	1
SE-Asia	2,468	2,622	9,717	8,730	1,635

Source: FAO (2009b)

In terms of population of dairy cow Indonesia has the 2nd largest stock number among SE-Asian countries, after Myanmar⁵ (see Table 5-1). Regarding domestic production of fresh milk Indonesia ranks third after Myanmar and Thailand. Indonesian consumption of dairy products – measured in milk equivalent – is the highest, accounting for 25% of the total regional consumption. In respect of dairy products' imports, almost all SE-Asian countries are dependent significantly on supplies from abroad, since the self-sufficiency rate (the ratio of domestic production to consumption) on the regional level is only about 25%. With a self-sufficiency rate of around 30% Indonesia is well below Myanmar (90%) and Thailand (45%), yet above Malaysia (3%) and Philippines (1%). Despite the generally low self-sufficiency rate, there are considerable amount of exports from SE-Asian countries, excluding Myanmar and Viet Nam, ranging from 10 to 20% of the domestic availability (domestic production plus imports). Singapore constitutes a peculiar case (not listed in Table 5-1) because it has no domestic production at all but exports the most among SE-Asian countries, namely 750 kt in 2006, and thus makes up almost 50% of total exports in SE Asia. These facts imply that some

³ Figures for 'consumption of dairy products' are rough estimates that are calculated as follows: Consumption = Production + Import – Export. The latest FAO's statistical data on domestic consumption is limited up to year 2003.

⁴ FAO's data on Indonesian milk production in year 2006 deviates from Indonesian official data (see Figure 7-4). However, to maintain the comparability with the data for the other countries, FAO data is used here.

⁵ It is important to note from the outset that FAO's statistical data on Myanmar is often subject to dispute among tropical dairy specialists (Moran 2005, p. 14).

of the dairy products imported are not only for domestic consumption but also further processing and then re-exported.

5.3 Development of domestic production

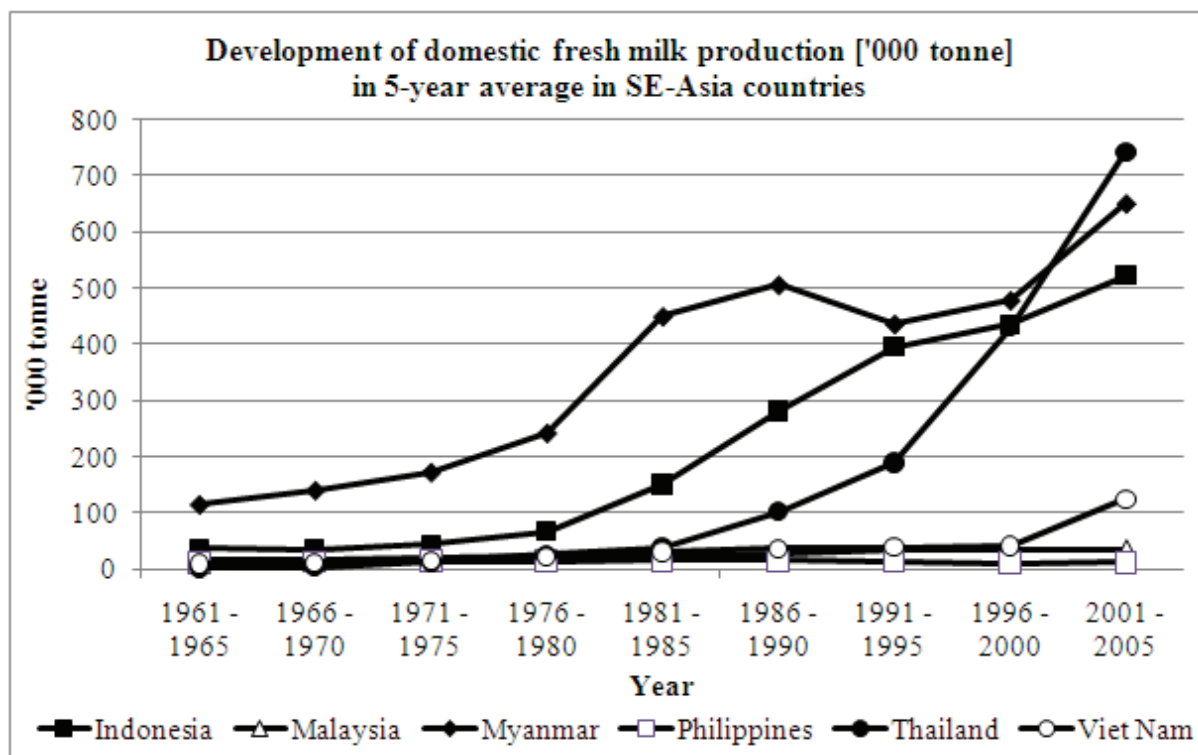


Figure 5-2 Development of whole fresh milk production in SE-Asian countries

Source: FAO (2009b)

On the regional aggregate the production of fresh milk has been, on average, growing at 6% yearly over the last 45 years. On the national level the development pattern of fresh milk production can be roughly distinguished in three groupings (see Figure 5-2):

- Myanmar seems to have the largest dairy production in SE-Asia since the 1960s and this supremacy has also been sustained hitherto thanks to its, more or less, steady production increase over times (5% average annual growth rate between 1961-2006). However, it is, again, worthy of notice here that statistical data about Myanmar is subject to dispute among tropical dairy specialists (Moran 2005, p. 14).
- Indonesia, Thailand, and Viet Nam had initially small dairy production, yet experienced pivotal expansion of production capacity during the last 45 years, albeit not in the same time period. Indonesian dairy production has experienced significant growth starting from the 1980's and has quadrupled from 85 kt to 360 kt within 10 years (1981-1991). The

compound or average annual growth rate over the last 25 years (1981-2006) amounted to 8.2%. Thailand production capacity commenced growing enormously from mid 1980s with an average annual growth rate of 13.2% over the last 20 years (1986-2006) and thus has improved its position from one of the smallest producers toward 2nd largest producer in SE-Asia in 2006. Dairy production in Viet Nam started to expand since 2001 and has more than tripled in 5 year; a rapid growth that was commensurate with an average annual growth rate of 27.1% (2001-2006).

- In Malaysia and Philippines production capacity has virtually been unchanged over the last 45 years (average annual growth rate of 1%). Apparently primary production of fresh milk is not a prospective business in these countries or there is no particular development policy addressing this sub-sector.

5.4 Development of domestic consumption and export

Changes in domestic consumption and export⁶ are reliable indicators for market trend. Overall, consumption and export have been, more or less, increasing in the selected SE-Asian countries (see Figure 5-3), at least over the last 15 years. The average annual growth rate between 1961 and 2006 in the regional level was 5%; the same rate applies for Malaysia, Myanmar, and Philippines. With an average annual growth rate of 7% the consumption and export in Indonesia, Thailand, and Viet Nam grow faster than the regional average. Starting from a similarly low consumption and export level in 1960s Indonesia and Thailand have now already surpassed Malaysia and Philippines, ranking the 1st and 2nd in the regional level, respectively. The lower growth performance of Malaysia and Philippines results from weak and stagnant domestic production and strong dependency on import for satisfying domestic consumption and export need (see Figure 5-5).

In general, the annual per capita consumption of dairy products in SE-Asian countries is still far below the average level of developing countries in the world⁷ which lies at 75 kg/year/person (see Figure 5-4). Moreover, there has not been any significant increase in the

⁶ The sum of consumption and export is equal to the sum of production and import (domestic potential availability).

⁷ World developing countries is taken here as a benchmark in measuring the development status of per capita consumption of dairy products, since there is no data available for the aggregate level of SE-Asia.

per capita consumption over the last 45 years, despite the fact that consumption has been growing 5% annually. Only Malaysia shows exceptional dynamism here and achieves relatively the same level as world developing countries. Thailand also showed considerable increases from around 10 to 35 kg/year/person during 1980 to 2000, although the consumption level declined to 30 kg/year/person thereafter.

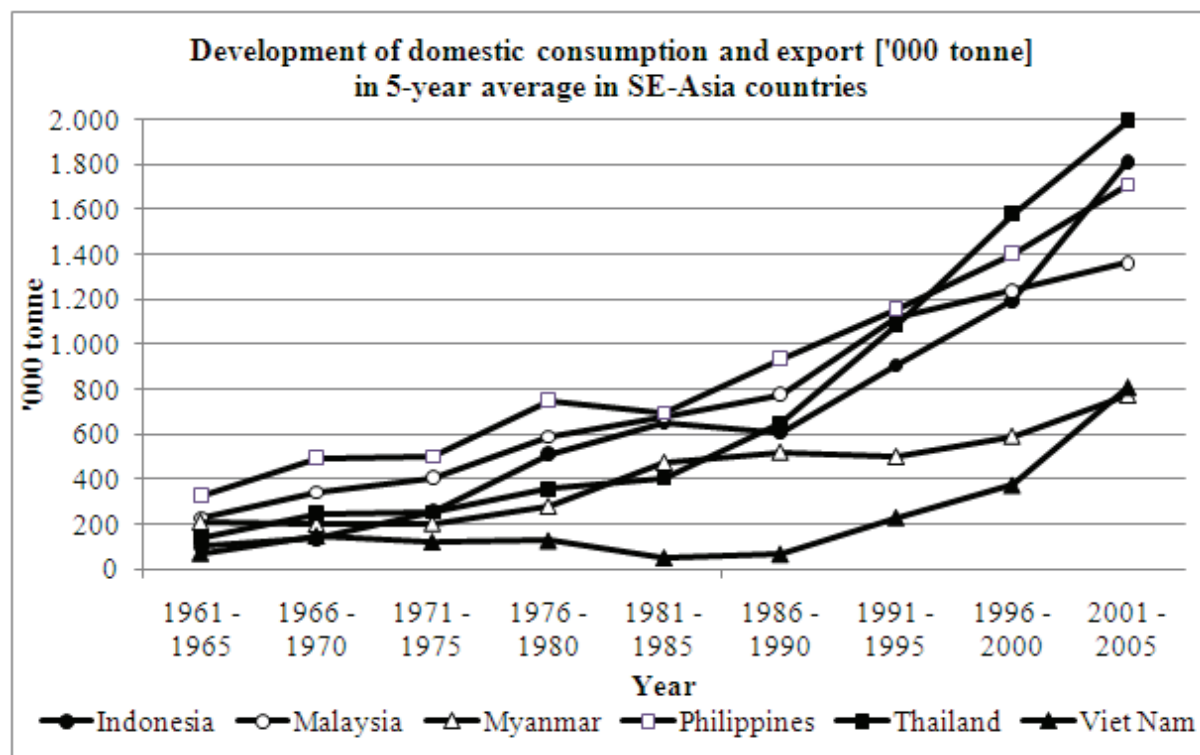


Figure 5-3 Development of domestic consumption and export in SE-Asian countries

Source: FAO (2009b)

Despite the fact that the absolute consumption level in Indonesia is the highest in South-East Asia, the annual per capita consumption of dairy products in Indonesia is the lowest in the region. Even the pivotal development in production capacity during the 1980's has not brought observable increase in per capita consumption. This stagnation can be attributed to the high population number in Indonesia. Hypothetically, if Indonesia would endeavour to improve its annual per capita consumption from 10 to 20 kg/year/person – and thus reaching the same level of Myanmar and Philippines – with the assumptions that the annual growth rate of consumption would remain 7% and the population growth rate 1.3%; then such endeavour would only be attainable in not less than 13 years – indeed a daunting task to accomplish.

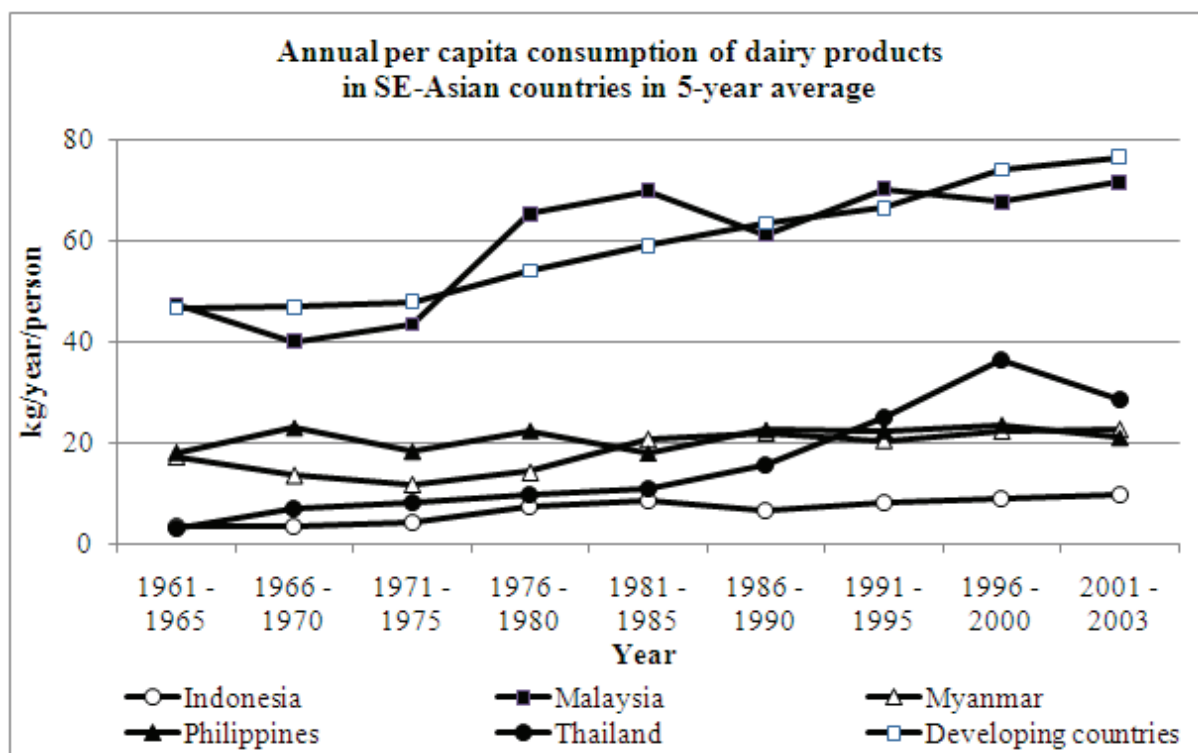


Figure 5-4 Development of annual per capita consumption of dairy products

Source: FAO (2009b), FAO (2009a)

5.5 Development of import and its share

The development of import on SE-Asia level over the previous 45 years is characterised by an average annual growth rate of 5% – the same as the regional growth rate of consumption and export. However, regional aggregates tend to mask local peculiarities: Figure 5-5 shows different development patterns of imports and their share in domestic availability (production plus import). As Malaysia's domestic production capacity remains the same over years, its increasing consumption is primarily covered by increasing imports which constantly account for over than 95% of the domestic availability. Thailand shows a different pattern: while the import volume is ever increasing, its share in domestic availability is consistently declining from above 90% in 1961-1985 to around 60% in 2001-2005 thanks to its rapid gain in domestic production. Indonesia shows a unique development here: the import share between 1981 and 1990 declined sharply from around 90% to 50% but picked up again, reaching steadily the level of 70% in 2001-2005.

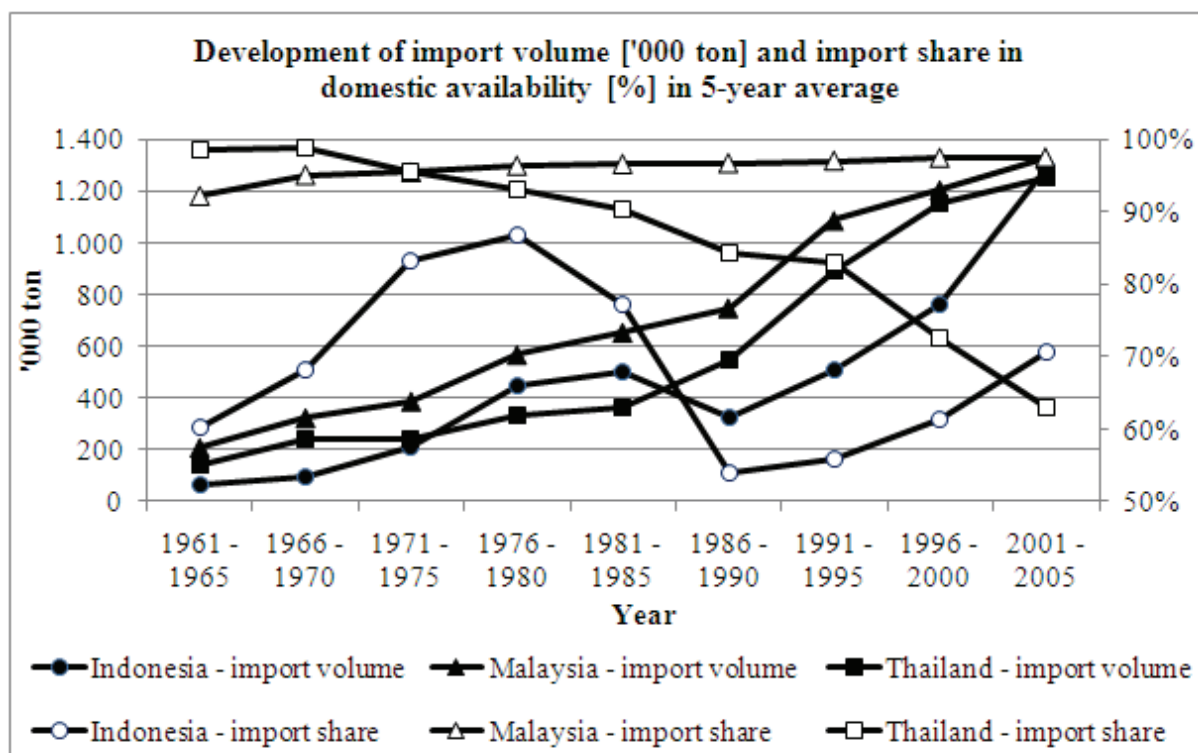


Figure 5-5 Development of import volume and import share in domestic availability

Source: FAO (2009b)

5.6 Concluding remarks

Dairy market in SE-Asia is expanding. The demand of dairy products has been increasing on average by 5% annually in the regional level over the last 45 years. The increasing demand of dairy products in SE-Asian countries has been primarily satisfied through imports, which grow at the same rate as the demand growth on the regional level. The persistent prevalence of import dependency indicates that the production increase in many SE-Asian countries has not been able to keep up with the consumption increase. Only in several countries like Indonesia and Thailand domestic production has been experiencing considerable growth reducing the import share in the domestic availability.

Despite the fact that Indonesia's per capita consumption is the lowest in the region, Indonesia is the largest market for dairy products in SE-Asia, constituting 25% of the regional aggregate. With an average annual growth of 7% Indonesia's consumption of dairy product has been growing faster than the regional rate. The domestic consumption has been primarily – similar to other SE-Asian countries – satisfied through by imports of dairy products. However, the retrospective analysis of the import share in the domestic availability shows an interesting development pattern: Indonesia's production of fresh milk surged from the 80's to mid

90's, but its growth rate has been gradually declining afterwards. Such phenomenon may give indications about significant changes influencing the performance of dairy production in Indonesia. The explanation of this phenomenon is dealt with in Sub-chapter 7.7.

6 Analysis of End Product and End Market

In this chapter the first part of the value chain analysis is described, i.e. the analysis of the end market (see Figure 6-1). As delineated by Springer-Heinze (2007a), end market plays a significant role for the whole value chain system because it, inter alia, provides the income distributed along the value chain¹. Thus, this chapter first examines the diverse dairy products on the end market and their respective segmentation, structure, and growth. Then, a segmentation and characterisation of the market, i.e. the end consumers demanding certain dairy products is described in the second sub-chapter. The third sub-chapter analyses the demand situation and its trend; while the fourth the price situation and its trend. As import is the largest source for Indonesian dairy market – both through dairy processing industries (DPIs) and unprocessed directly to end consumers –, the prevalent influence of international policy on the international dairy market is concisely described in the fifth sub-chapter.

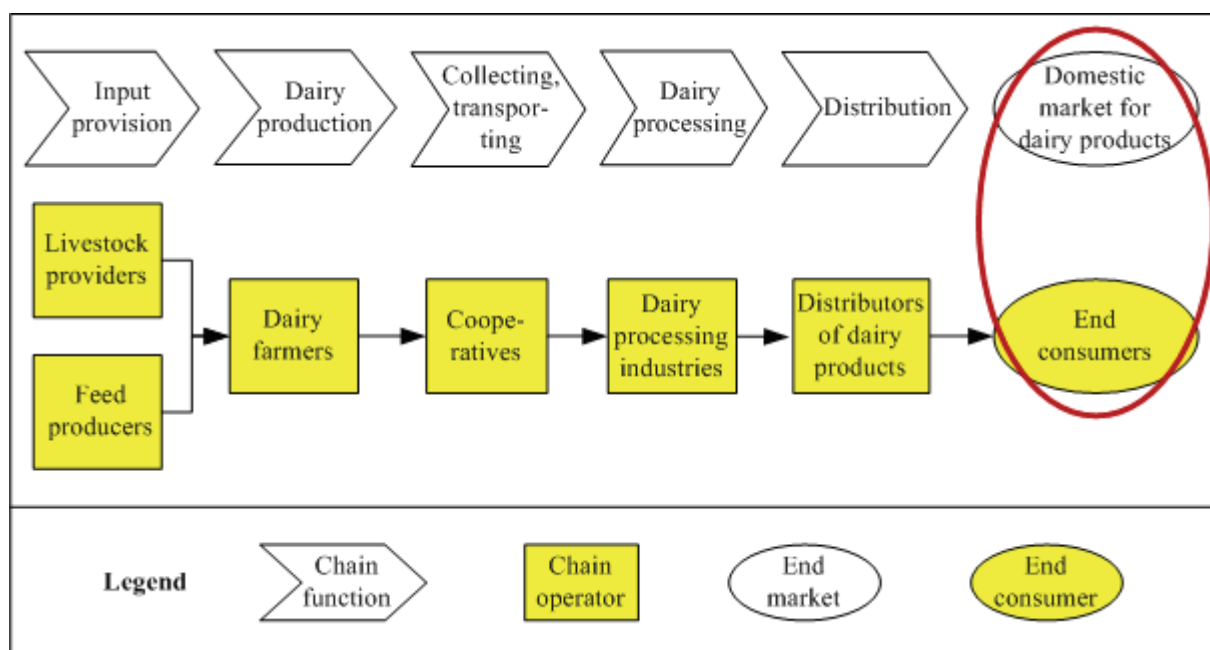


Figure 6-1 Dairy value chain in Indonesia: End product and end market

Source: own compilation

¹ See Springer-Heinze (2007b, pp. 2–8) for further discussion on the importance of the fundamental understanding of end market and the research on end market.

6.1 End product: Segmentation, structure, and growth

The end products of Indonesian dairy value chain can be roughly differentiated into milk powder, liquid milk, sweetened condensed milk (SCM), and other dairy-based food and beverages like cheese, butter, cream, yoghurt, etc. Milk powder is the most popular and widely consumed dairy product type in Indonesia that has been evolving from undifferentiated toward highly-segmented and specialised products: from instant full-cream and skim milk powder toward formula milk for infants, toddlers, and children; functional food for weight gain, weight loss, or other health purposes for adults; special formulation for pregnant and lactating women; or calcium-rich for elderly people. The product group of liquid milk comprises UHT, pasteurised, homogenised, flavoured milk drinks.

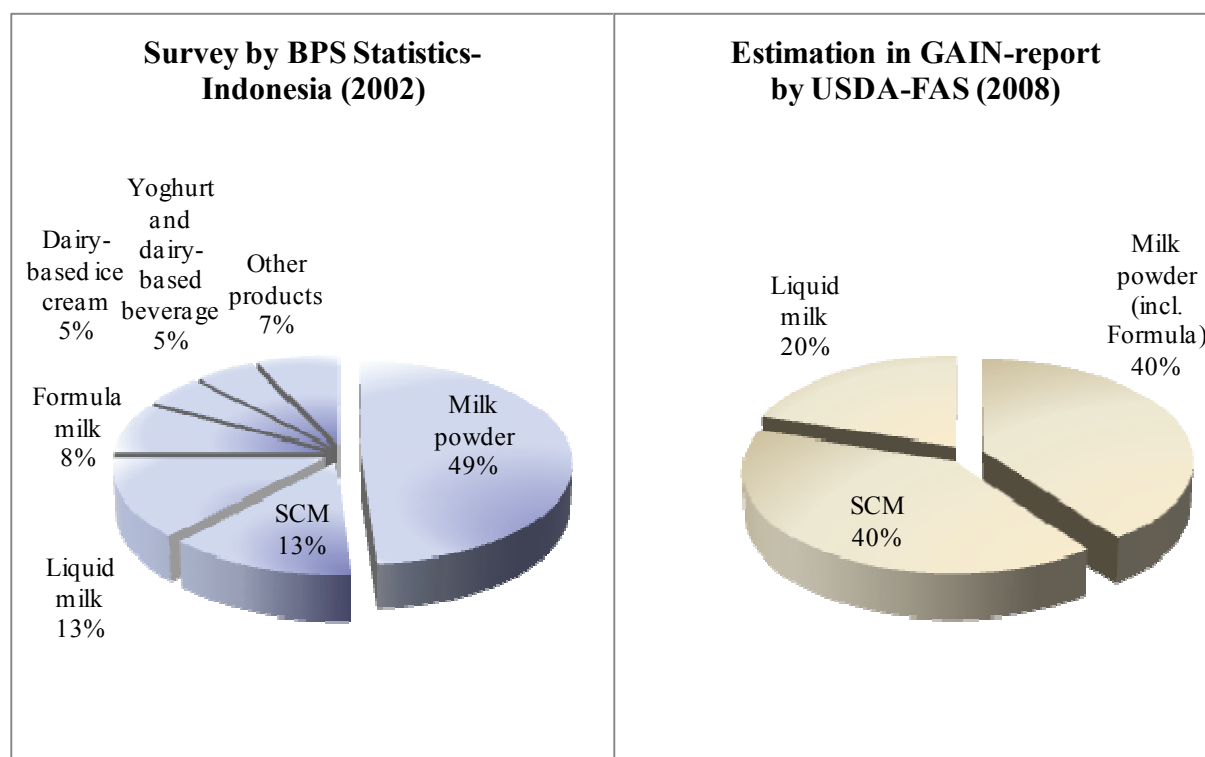


Figure 6-2 Product groups in Indonesian dairy value chain according to BPS and USDA-FAS

Source: adapted from Meylinah (2008); Stanton, Emms and Sia (2005)

As far as the structure or share of the product segmentation in the end market is concerned, there is no official data available, because DPIs are reluctant to disclose their production and sales figures. Some accessible, relatively reliable information sources are interviews or state-

ments by company spokesperson in national newspapers and business magazines², BPS Statistics-Indonesia, USDA-FAS, as well as author's own observation. Figure 6-2, drawn on a survey by BPS Statistics-Indonesia and estimation by USDA-FAS, illustrates the segmentation of dairy products in Indonesia and their respective share in the total market value. In general, all sources stated that milk powder and SCM are the main dairy product type consumed with an estimated market share of 30-60% and 40-50%, respectively; whereas liquid milk owns the smallest share of 10-20%. BPS Statistics-Indonesia might understate the market share of SCM since its consumer basis and the respective distribution channel, i.e. lower-income consumers and retail shops in sub-urban and rural areas, might not be included in the survey respondents.

In respect of the growth of each product segment, milk powder has the smallest yearly gain of 6%. Often it is estimated that liquid-milk segment would be growing the fastest (30%), while SCM on the contrary would be declining³. This estimation was drawn on the assumption that with advancing education level and income consumer preference would shift toward more natural and fresh products. Nevertheless, company spokespersons stated, as reported in Kompas (2008) and Kontan (2008), that such estimation has been disproved as the yearly sales of SCM are increasing by 10-30%. This unexpected phenomenon can be explained by following reasons. First, the fuel price increases in 2005 and 2008 have weakened the purchasing power of, in particular, middle-lower-income consumers – the largest consumer segment of dairy products (see Table 6-1). As a result, they shifted from liquid and powdered milk to cheaper milk product such as SCM. Second, as one of the target markets for SCM is businesses offering culinary services (the food and beverages sub-sector) ranging from hawkers, street vendors, ice-cream parlour to large restaurants; the growth in this service sub-sector also contributes to the increasing demand of SCM.

6.2 Market segmentation by product and consumer segment

As shown by Table 6-1, the domestic end market of dairy products is highly segmented. High-value milk products such as imported yoghurts, cheeses, and premium ice creams are sold in supermarkets, hypermarkets, or modern retail shops with integrated cooling chain.

² Kompas (2008); Kontan (2008); Rauf (2008); Warta Ekonomi (2009)

³ Meylinah (2008); Wagner et al. (2006); Meylinah et al. (2005, p. 3)

Middle-income consumers buy all sort of domestically produced dairy products with renowned brand. A survey by Stanton, Emms and Sia (2005) that was conducted among housewives belonging to this market segment indicated that they are increasingly more conscientious in selecting high-quality products, such as formula milk for infants and children. The largest consumer segment is the price-sensitive, low-income consumers demanding inexpensive products like SCM and dairy products in small packaging. Due to their proximity to dairy farmers these consumers may have the potential as direct buyers of dairy products produced or processed by dairy farmers or cooperatives. The rest of the population, i.e. 100 – 150 million people, does not possess the purchasing power for buying dairy products – this group mainly resides in outlying areas outside of Java and Bali where infrastructure is underdeveloped, thereby making the cost of distribution even higher (Rittgers 2004).

Table 6-1 Market segmentation based on products and consumers segment

Market segment	Location	Estimated market size	Product
High-income consumers including expatriates	Metropolitan areas	2-5 million people	<ul style="list-style-type: none"> - Imported products - Pasteurised liquid milk - Yoghurt - Premium ice cream - High value formula and milk powder
Middle-income consumers	Urban areas	8-15 million people	<ul style="list-style-type: none"> - All kind of branded local dairy products (Nestlé, Frishe Vlag, Indomilk, Ultrajaya, etc.) - Increasingly imported formulas for infants and children
Low-income consumers	Sub-urban and rural areas	60-100 million people	<ul style="list-style-type: none"> - Instant food and beverage products (dairy-based) - Sweetened, condensed milk - Milk powder and formula in small packages produced specially for this market

Source: Meylinah (2008); Stanton, Emms and Sia (2005)

6.3 End market: Demand situation and trend

In 2006 domestic consumption was 2,212 kt while export 210 kt and thus equivalent to approximately 90% and 10% of the sum of domestic production and imports, respectively (see Figure 6-3). During the last 5 years domestic consumption has been growing on average 11% annually from 1,302 (2001) to 2,212 kt (2006); whereas export has been declining on average 5% annually from 278 (2001) to 211 kt (2006). According to Rittgers (2004, p. 5) and Meylinah et al. (2005) export destinations are mainly North Africa and the Middle East, in which Iraq had once been a major destination but experienced a decline in trade due to the instability in the region. Products exported are dairy products in powder form that are imported primarily from New Zealand, repackaged and then re-exported. Hence, it can be concluded that the domestic market is the most significant end market for Indonesian dairy value chain.

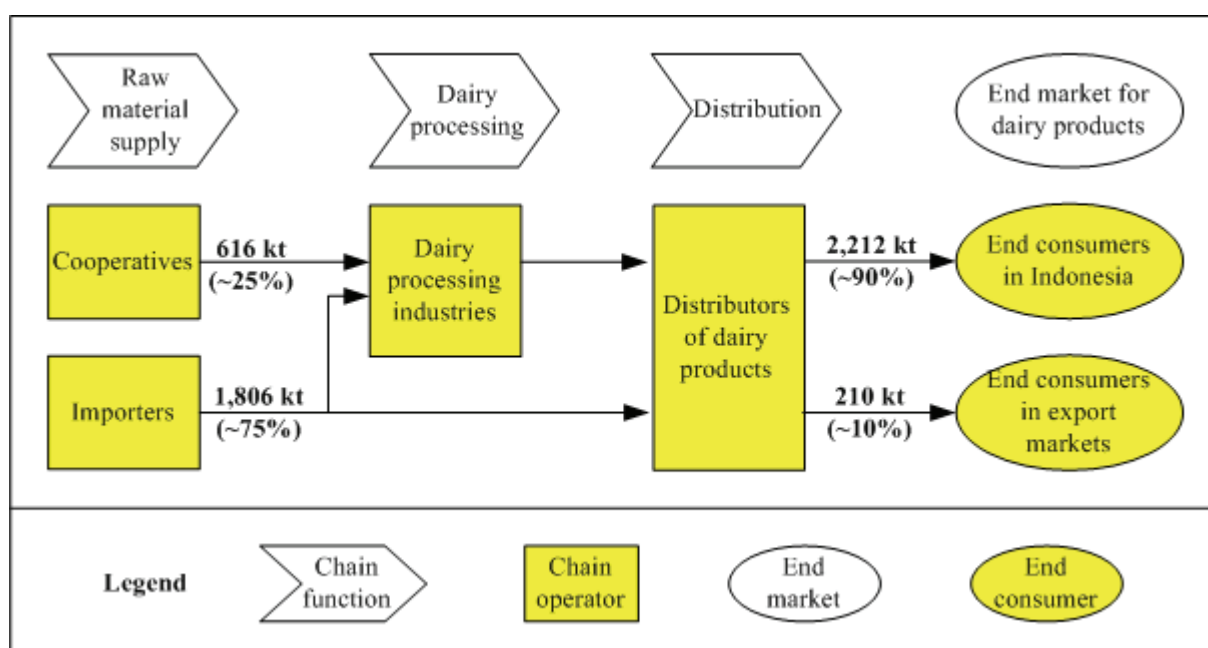


Figure 6-3 Dairy value chain in Indonesia: Domestic and export markets

Source: own compilation

Over the last 15 years increases in consumer demand have been outstripping those in domestic production; hence the share of import in domestic availability (see Figure 5-5) rose from 55 to 75 %. This enormous excess demand and ever-increasing demand trend provides unprecedented opportunities for small-scale dairy farming in Indonesia, in which smallholder dairy farmers and their cooperative constitute the majority of the total primary producers⁴.

Increasing demand has been fuelled by growing number of Indonesian large population, economic growth and thus higher purchasing power, changing food consumption pattern toward Western diets, and strong generic promotion of milk products particularly through schools (Moran 2009, p. 30). Nonetheless, the per capita consumption of dairy products in Indonesia – around 10 kg/person/year – ranks the lowest in South-East Asia and even far below the consumption level in developing countries. This condition, on the one hand, has been frequently discussed in the general public, thereby increasing consumers' awareness of the importance of increasing milk consumption due to its nutritional benefits (Kompas 2008; Warta Ekonomi 2009). On the other hand, it has given a clear impetus to the Government of Indonesia (GoI)

⁴ Cf. Sub-chapter 7.5

to enact policy supports – such as school milk programmes and soft loan programs for purchasing dairy stock – boosting the consumption and production of milk products. With such dynamisms on both the consumer and policy-maker side the per capita consumption of dairy products is expected to increase in the near future.

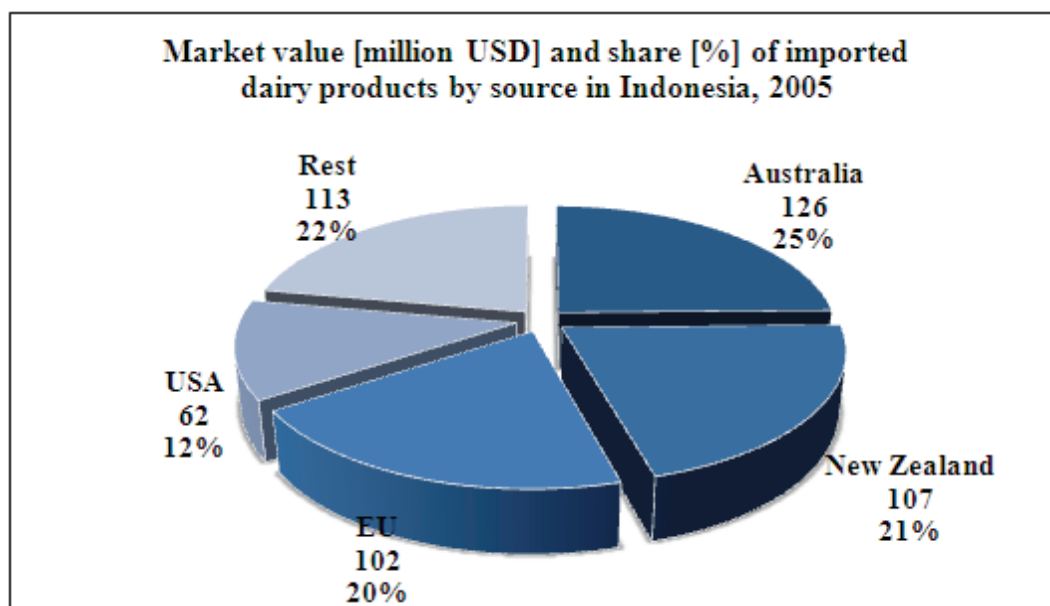


Figure 6-4 Market value and market share of imported dairy products by source

Source: Bond et al. (2007, pp. 14–15)

To meet its domestic consumption Indonesia relies mainly on imports of dairy products from Australia, New Zealand, European Union, USA, and other countries. Given their advantageous proximity to and long historical presence in Indonesia's dairy market, Australia and New Zealand continue to dominate the import market for dairy products, accounting for over 25% (valued at around 126 million USD) and 21% (107 million USD) of the total imports, respectively. Imported dairy products are mainly skimmed milk powder (SMP) and whole milk powder (WMP), as well as smaller amount of cheese, yoghurt, butter, and whey (Bond et al. 2007, p. 15). Among these products SMP accounts for about 80% of the total (Meylinah et al. 2005, p. 4). This is on account of DPIs' preference to SMP as it has longer shelf life, a slightly lower price, and is easier to combine with other dairy products (Rittgers 2004, p. 5). SMP is sourced mainly from Oceania and the EU (60% of the market share) and the US (30%), WMP from Australia (60%) and New Zealand (15%), and whey from the US (Meylinah 2008, pp. 4–5; Meylinah 2007, p. 4).

6.4 End market: Price situation and trend

The situation and trend of prices for end products are a good measure of assessing demand/supply situation, market potentials/risks, as well as level of competition and their dynamic changes over time. However, since there is no statistical data available for the wide range of dairy products in the domestic market, the analysis of price situation and trend shall be drawn on the statistical data for dairy products on the international market⁵, as these constitute the largest portion for the domestic consumption.

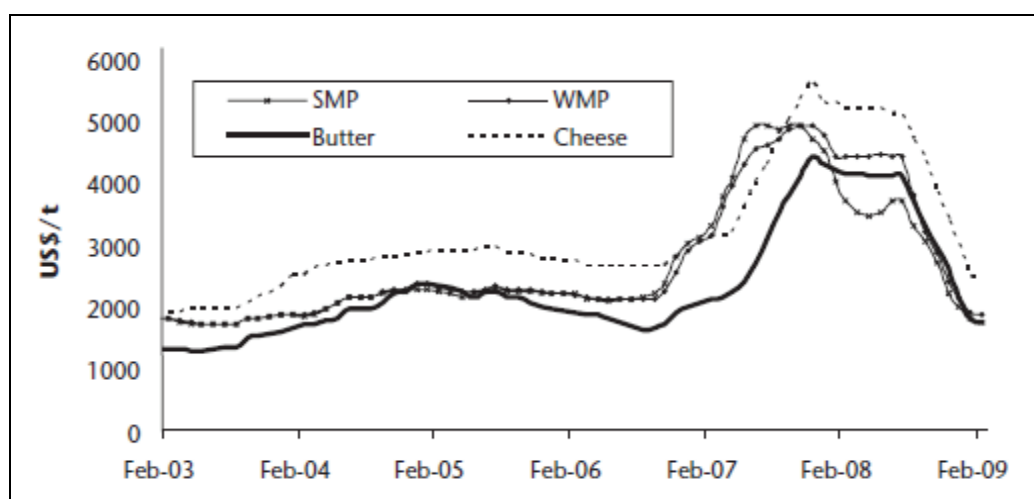


Figure 6-5 Prices development of dairy products on international market (2003 – 2009)

Source: Moran (2009, p. 87)

As shown by Figure 6-5, international prices of dairy products had been more or less stable between 2003 and 2006, signifying a stable supply/demand situation. However, commencing from the late 2006 international prices soared exorbitantly and recorded a historical peak at the end of 2007, shocking dairy industries and consumers worldwide: within 12 months the international price of dairy commodities had virtually doubled from around 2,500 to 5,000 USD per metric tonne. This dramatic price increase had been a result of substantial diminution of global supply which was caused by⁶:

⁵ It is, however, important to acknowledge here, that the real price trend of domestic dairy products does not stand in one-to-one relationship with the international price trend. Other factors would play influential role here: the development of exchange rate USD/IDR over time, inflation rate, etc. Thus, such associative analysis should be seen merely as an attempt to depict a rough picture of the reality.

⁶ Moran (2009, p. 29); FAO (2009a, p. 4); Morgan (2009, p. 1); FAO (2009a, p. 4)

- i. **Policy changes in the dairy sector:** the discontinuation of export subsidies for dairy exports by the EU and export bans imposed by India;
- ii. **Record low levels of intervention stocks:** the decline of stocks in the EU and the US due to stagnant milk production growth;
- iii. **Adverse natural occurrences:** droughts in Australia as one of the major exporting countries and floods in South America;
- iv. **Changing market condition for feed supply:** increasing feed grain prices on account of increasing demands and uses for biofuels.

As a result of this unprecedented price increase, large dairy companies in Indonesia are increasingly gravitating toward local supplies of fresh milk. This, on the one hand, demonstrates the attempt of dairy industries to hedge against risks of possible future fluctuations in international dairy prices by reducing reliance on imported supplies and, on the other hand, provides an impetus for developing the smallholder dairy sector (Moran 2009, p. 30; Moran 2008). Nevertheless, such high prices were not sustained in the short to medium term as the international prices started to abate in early 2008. The easing of prices could be in response to two factors (Morgan 2009, p. 1): first, the positive supply responses in both developed and developing countries; and, second, the resistance of end consumers – particularly in developing countries – to pay higher prices.

In the domestic market, the soaring prices of dairy products in the international market forced Indonesian DPIs to gradually increase the prices of their end products up to 20% by the end of 2007 (Meylinah 2007, p. 4). This brought about a sporadic panic buying among middle to upper income housewives whose infants and toddlers depend on baby formulas.

6.5 End market: Influence of international policy

At this point, it is important to acknowledge that the international prices for dairy products are severely influenced – or, more precisely said, disrupted – by the pervasive support policies for the dairy sector in industrialised countries, such as export subsidies. To the extent of their market distortion Morgan (2009) wrote:

Historically, high support for dairy products in OECD countries have led to structural surpluses which, combined with the use of export subsidies and high tariffs in developed countries, have led to excess – and low priced – dairy products being directed to many developing countries in Asia and Africa. While milk consumption in developing countries is estimated at only 40 percent of global totals, nearly three quarters of global shipments of dairy products are destined for these countries. In fact, ninety percent of milk powder exports from developed countries are destined for developing countries where they are estimated to supply as much as half of the formal or processed dairy markets.

The sudden and recent rise in dairy prices took the market by surprise in the late 2006 and is attributed to a number of factors which include higher feed prices, drought, policy changes, etc. However, in various studies, it has been estimated that decades long dairy product policies and support for the sector in OECD countries have depressed international milk equivalent prices by some 25-35 percent. Consequently, while price rises may have been unexpected, they may likely reflect the reality of markets adjusting to a situation less distorted by government interventions. (Morgan 2009, p. 2)

Hence, with the cessation of export subsidies in the EU, the international dairy market will experience a “long-term structural adjustments” (Moran 2009, p. 29) that might gradually lead to less undistorted and thus higher prices of dairy products.

6.6 Concluding remarks

The analysis of the end product and end market of Indonesian dairy value chain has shown that dairy end products are highly differentiated. Milk powder and SCM are the main products. The former is the most popular and widely consumed, whereas the latter has – under current economic conditions – the fastest demand growth. With regard to segmentation of end consumers there are three distinguishable consumer groups forming a pyramid structure: the low-income (sub-urban / rural areas; SCM) forms the base of the pyramid; the middle-income (urban areas; branded domestic products) in the middle; and the high-income (metropolitan areas; imported dairy products) on the top. The own domestic market is considered as the most significant end market for Indonesian dairy value chain. It is characterised by an ever-increasing demand trend and widening demand/supply gap. To satisfy its domestic demand, Indonesia relies mainly on imports of dairy products – such as SMP, WMP, cheese, butter, and whey – from Australia, New Zealand, the EU, and the US. The price of dairy products had been relatively stable in 2003-2006, but experienced a monumental increase during 2007, reached a plateau from the early to mid 2008, and started to decline abruptly afterwards. The unprecedented price increase was caused by the abolition of export subsidy in the EU, declining intervention stocks in the EU and the US, adverse natural occurrences, and increasing feed grain prices.

Responding to these new challenges, Indonesian DPIs are increasingly gravitating toward domestic, smallholder fresh-milk producers to hedge against risks of fluctuating supplies and prices of imported products. Such condition presents greater opportunities for domestic smallholder dairy producers and their cooperatives to upgrade themselves and to capture more value-added and larger portion in Indonesian dairy value chain.

7 Analysis of Value Chain Operators

This chapter describes the second part of the value chain analysis, namely the value chain operators. In the first sub-chapter, the overview map of Indonesian dairy value chain is depicted. This map characterises the chain functions and the value-adding activities involved in the respective chain function. Then, the number of operators along the value chain is quantified in the second sub-chapter, complementing the qualitative description, to provide more detailed picture of the dairy value chain. The third, fourth, fifth, sixth sub-chapters analyse DPIs, cooperatives, dairy farmers, and input suppliers, respectively. The seventh sub-chapter describes the policy environment of Indonesian dairy value chain and its change over time, thereby explaining the interesting phenomenon of rapid production increase and sharp decline of import in the 80's and 90's as it is described in the Sub-chapter 5.6.

7.1 Value chain mapping: Functions and operators

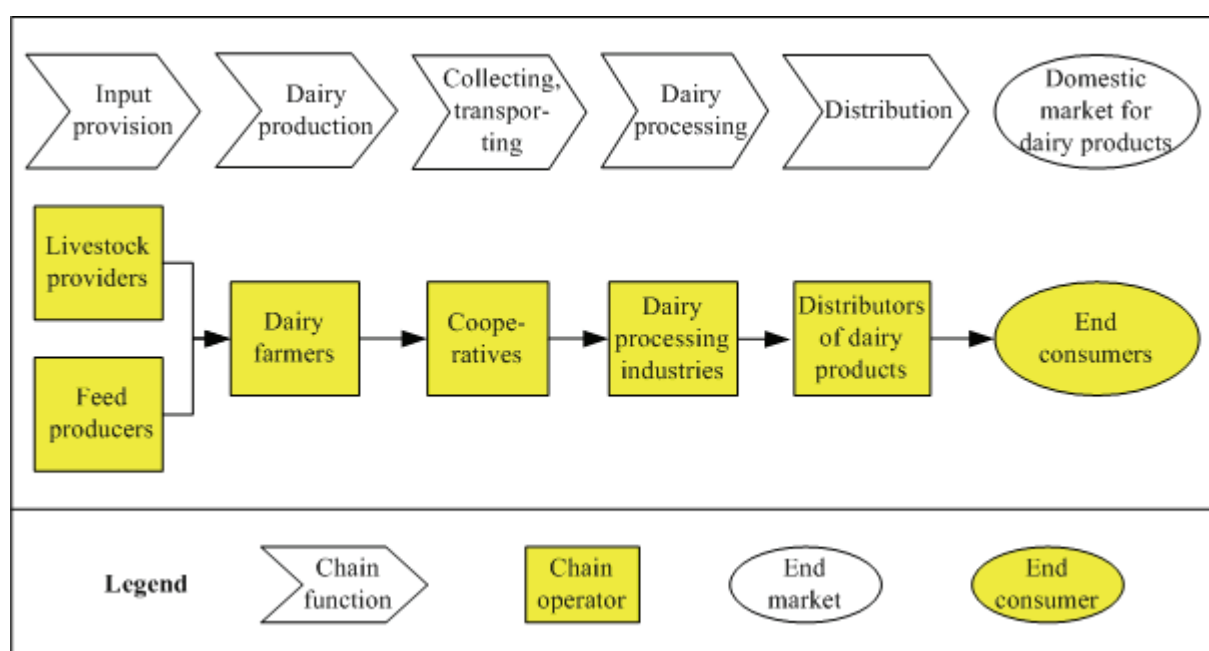


Figure 7-1 Dairy value chain in Indonesia: Functions and operators

Source: own compilation

Following Springer-Heinze (2007b), a value chain as an economic system can be defined as:

a sequence of related business activities (functions) from the provision of specific inputs for a particular product to primary production, transformation and marketing, up to the final sale of the particular product to the consumer; or

the set of enterprises (operators) that performs these functions, i.e. the producers, processors, traders and distributors of a particular product. These enterprises are linked by a series of busi-

ness transactions in which the product is passed on from primary producers to end consumers. (Springer-Heinze 2007b, p. 2)

Based on this definition Figure 7-1 depicts the dairy value chain in Indonesia. This overview map entails only the generic chain functions and operators that can be found in all local dairy value chains regardless their local specificity.

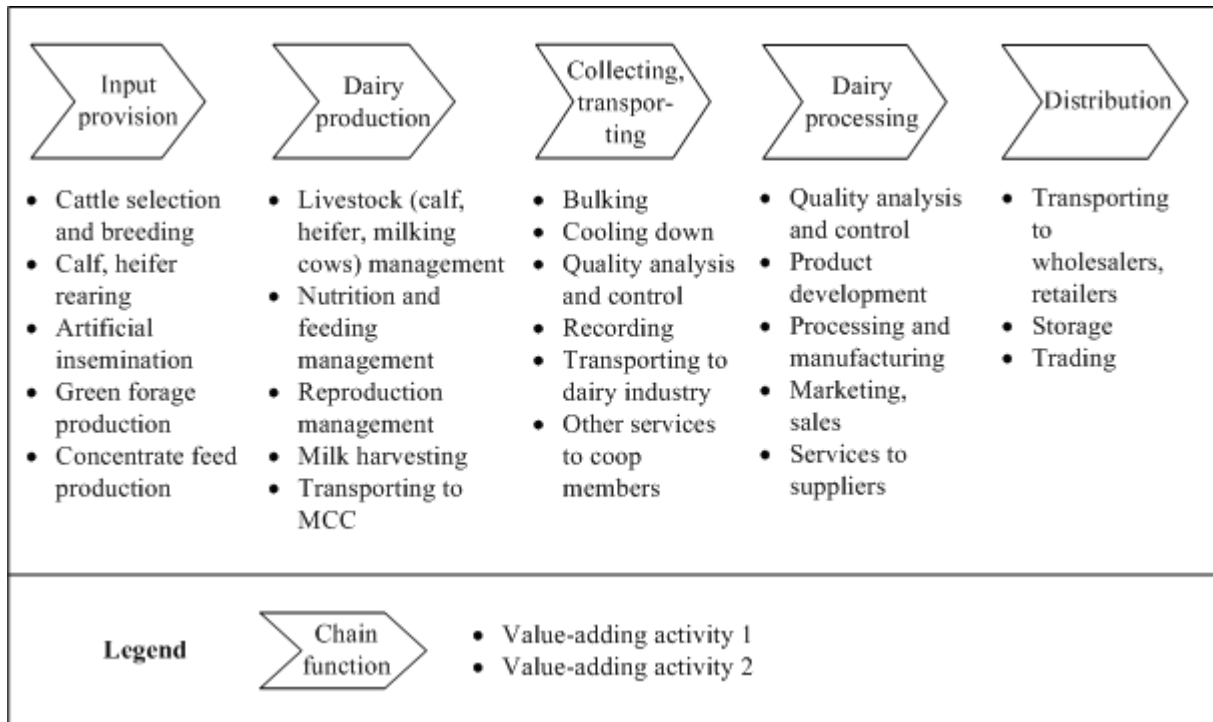


Figure 7-2 Dairy value chain in Indonesia: Chain function and value-adding activity

Source: own compilation

These aggregated value chain functions can further be dismantled into more detailed economic value-adding activities as shown by Figure 7-2. Not every chain operator, of course, performs all of the listed value-adding activities. Some value-adding activities might be captured by the antecedent or subsequent operators, or just missing. Some value-adding activities might also be performed in different level of intensity or quality. For example, all dairy farmers might perform all value-adding activities in the chain function ‘dairy production’; but some might do it well according to good dairying practices and some others might even do not know about it. Another example, all cooperatives might have, more or less, an installed quality control mechanism; some, however, would apply a simple organoleptic test while others might run regular laboratory tests. Nonetheless, the listing of such productive activities is beneficial since it serves the purposes of: first, making transparent all productive activities adding incremental value to the good, thereby providing a profound understanding for value-

capturing strategy; and, second, identifying essential activities belonging to a certain chain function, thereby opening the chance of discovering missing or dysfunctional productive activities in the value chain.

7.2 Value chain mapping: Quantification of operators

Since this research is primarily concerned with the issue of value chain upgrading by domestic chain operators in the domestic market, the following sub-chapters are delimited by examinations on input suppliers, dairy farmers, cooperatives, and dairy processing industries (DPIs). The wide range of distributions channel and type is not covered here.

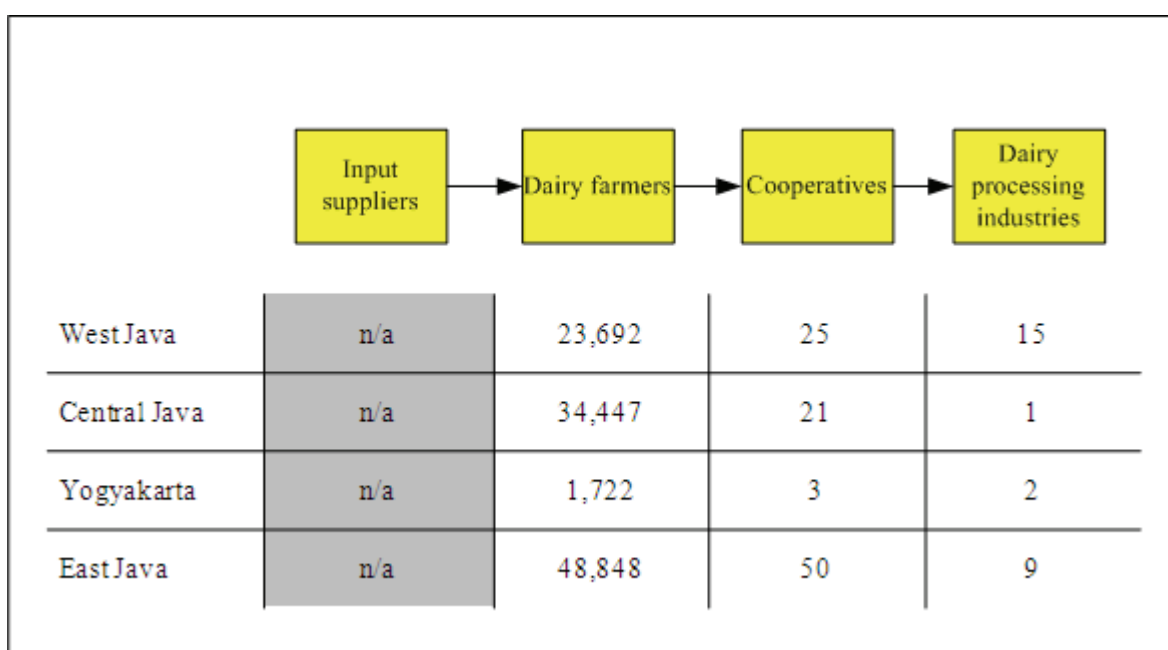


Figure 7-3 Quantification of VC: Number of operators along the chain

Source: compilation from various sources¹

As it has been mentioned in the previous chapter, dairy value chain in Indonesia has been developing primarily on Java Island, where infrastructure is at place. This is of particular important since milk as extremely perishable good requires adequate treatment in the production

¹ Number of dairy processing industries: Datasumber (2008); Dinas Peternakan Jawa Timur (2009); Direktorat Jendral Bina Pembangunan Daerah (2006). Number of cooperatives: GKSI Jawa Barat (2007b); BPS Jawa Tengah (2008); Direktorat Jendral Bina Pembangunan Daerah (2006); Dinas Peternakan Jawa Timur (2008a). Number of dairy farmers: Direktorat Jendral Peternakan (2008).

and distribution: adequate equipment for milk harvesting and transporting, good access to roads, shorter delivery time to DPI, distribution system with cooling chain for certain dairy products, etc.

Figure 7-3 entails only the numbers of operators on Java Island, grouped according to the regions. The quantification of value chain operators serves the purpose of drawing more detailed picture of the reality and thus complementing the qualitative description of the value chain. By quantifying the chain, it is possible to identify, *inter alia*, possible concentration of market power along the chain or in certain region, as well as the size of the business in certain value chain function.

7.3 Dairy processing industries (DPIs)

In stark contrast to the production function that is operated by a huge number of small-scale dairy farmers, the processing function of Indonesian dairy value chain is dominated by a handful of large, dynamic, and competitive companies². They are situated in a fierce competition which is characterised by continuous product development and marketing efforts to open up new markets across the country. While it can be assumed that full market-competition rules in the end market, the supply market – the relationship between DPIs and their suppliers – is characterised by an oligopsonistic market situation. There is also criticism that to increase profit by reducing competition among themselves DPIs form a cartel and abuse their market power for price-fixing³, in this case for suppressing domestic milk price. For example, in 2002 – 2006 DPIs unanimously retained the level of domestic price for fresh milk despite changing international milk price and enormous domestic supply gap.

As far as the geographical dispersion of DPIs concerned, Central Java has the least DPIs (3) in comparison to West Java (15) and East Java (9). Its ratio of dairy farmer to DPI is proportionally much higher (around 12,000 to 1) – relatively similar to East Java (9,000 to 1) – than West Java (1,600 to 1). The ratio of dairy farmer to DPI could indicate the degree of dependency of dairy farmers on DPI. Only one – and the smallest – of the 5-largest DPIs is located in Central Java / Yogyakarta, namely Sari Husada / Nutricia (see Table 7-1). As a consequence,

² See Sub-chapter 9.1 for the brief history of the 5-largest DPIs.

³ Cf. Suksmaningsih (2005); Priyanti et al. (2008)

some of the milk produced in Central Java has to be delivered to DPIs in other province. Indeed, such situation is detrimental to the milk quality since the long-distance transportation requires longer delivery time⁴.

Among 27 DPIs there are currently five main dairy manufacturers in Indonesia, namely Friesian Flag Indonesia (FFI) / Foremost Indonesia, Indolacto / Indomilk, Ultrajaya, Sari Husada / Nutricia, and Nestlé. These 5 DPIs account for 90% of the total sales volume (Rittgers 2004, p. 3; Meylinah et al. 2005) and are in fact the key players of Indonesian dairy value chain as they are the main buyers of fresh milk produced by the cooperatives. The comparison between the year 2004⁵ and 2000 shows that in general the structure of fresh-milk demand by the DPIs had not changed much.

Table 7-1 The 5-largest DPIs in Indonesia and their share in domestic fresh milk consumption (2004 and 2000)

Company Name	Location	Year 2004		Year 2000	
		Demand for fresh milk [t/d]	Share [%]	Demand for fresh milk [t/d]	Share [%]
Nestlé	East Java	501	47	480	53
FFI ⁶ / Foremost Indonesia	West Java	301	28	224	25
Indolacto / Indomilk	West Java	126	12	113	12
Ultrajaya	West Java	65	6	46	5
Sari Husada / Nutricia	Yogyakarta	44	4	46	5
Others		22	2	n/a	n/a

Source: Stanton, Emms and Sia (2005, p. 21); Moran (2007, p. 9)

Table 7-1 shows the 5-largest DPIs' location, daily demand of fresh milk, and share of consumption of the total milk sold by Union of Indonesian Dairy Cooperatives (UIDC). Since both authors drew their data on UIDC, two consequences are worthy of notice here. First, DPIs which are not buying milk from UIDC are not included in the list. Second, suppliers of fresh milk which are not member of any cooperatives or UIDC – such as private dairy companies with relatively larger herd that are able to deliver fresh milk to DPI by themselves –

⁴ Cf. Table 10-2

⁵ Unfortunately, no accurate, more recent data is available for this topic.

⁶ Also known as 'Friesche Vlag'

are also excluded. Nonetheless, such DPIs and milk suppliers are not influential in size since UIDC supplies around 90% of the total need of the largest DPIs (Investor Daily Indonesia 2009).

Other, relatively smaller DPIs produce pasteurized fresh milks with flavours, UHTs, various types of cheese and yoghurt sold primarily in the large supermarkets with sophisticated cooling chain. Usually such companies procure fresh milk from their own managed dairy farm to ensure that the quality required for processing is controlled and safeguarded. However, as the demand for dairy products is rising, smaller DPIs are increasingly procuring fresh milk also from cooperatives, as it is the case of Greenfields in East Java (Sutejo 2006).

Another interesting point is that some of the largest cooperatives have engaged in dairy processing activities for being aware that much of the value-added is created in the chain function of processing and trade. One of the largest cooperative in West Java, KPSBU Lembang (*Koperasi Peternak Sapi Bandung Utara*) or North Bandung Dairy Cooperative, has initiated a small production of yoghurt with the brand 'Fresh Time' since 2006 and been selling this product directly to end consumers through its own outlets in Bandung's region (GKSI Jawa Barat 2007a). In East Java 6 of the largest cooperatives – i.e. 4 cooperatives from the District of Pasuruan namely KPSP Setia Kawan Nongkojajar, KUTT Suka Makmur Grati, KUD Dadi Jaya Purwodadi, KUD Sembada Puspo; and 2 from the District of Malang, namely KUD Dau, Koperasi SAE Pujon – have jointly established a DPI called PKIS Sekar Tanjung (*Pusat Koperasi Industri Susu*) in 2005 (Hadi 2005). This DPI produces UHT milk in smaller Tetra-Pack "pillow" or pouch packaging designated for end markets initially in East Java and afterwards outside Java Island (Sumatra, Borneo, Celebes, etc.) where market competition is relatively lower (Pemerintah Kabupaten Pasuruan 2006).

7.4 Cooperatives

With regards to cooperative in the dairy sector there are two different organisational forms of cooperatives: the specialised 'dairy cooperative' and the multi-purpose 'Village-Unit Cooperative' – VUC (*Koperasi Unit Des*) – KUD). In general, cooperatives provide services – such as collective milk bulking, transportation, and selling; concentrate feed buying or production; extension advice; loan; veterinary services – to their members. Most cooperatives with dairy business unit are member of the secondary cooperative Union of Indonesian Dairy Cooperatives – UIDC (*Gabungan Koperasi Susu Indonesia – GKSI*). UIDC is represented on the national level as well as on provincial level, i.e. West, Central, and East Java.

The numbers in Figure 7-3 includes cooperatives from both types regardless the organisational form⁷. The 25 cooperatives in West Java, 24 in Central Java, and 50 in East Java are not homogenous. They are conventionally differentiated by their performance in daily production capacity. Based on this conventional classification Yusdja (2005) identified that most of the cooperatives had indeed a very small production capacity (see Table 7-2). However, performance assessment based solely on daily production capacity is not sufficient and might be misleading; since higher cooperative output does not necessarily correspond to higher farm output and/or animal productivity⁸.

Table 7-2 Distribution of dairy cooperatives based on daily production capacity (2000)

Class	Daily production capacity	Number (total = 100)
A	Above 40 t	6
B	20 – 40 t	4
C	10 – 20 t	17
D	5 – 10 t	16
E	Below 5 t	57

Source: Yusdja (2005, p. 260)

Figure 7-4 presents the development of milk production in Indonesia and on the province level between 2002 and 2007. The province of East Java is the largest producer of fresh milk in Indonesia with a production capacity of 249 kt annually or equivalent to 682 tonne daily, accounting for around 45% of the national production (2007). West Java ranks on the second place with a production capacity of 225 kt annually or 616 tonne daily, constituting 40% of the total domestic production. The third is Central Java which produces 71 kt per year or equal to 195 tonne per day, corresponding to 12.5% of the total national production. Another 2.5% is produced in other provinces outside Java.

Overall, as shown in Figure 7-4, milk production in Indonesia has an increasing trend. Between 2002 and 2007 the domestic milk production increased by 47 kt or 9%. The same trend

⁷ In Chapter 9 the typical features of these organisational forms are described, analysed, and discussed as it has further implications on the cooperative performance.

⁸ See Riethmuller et al. (1999a) for further discussion on the classification of cooperatives in Indonesian dairy sector.

applies to the provinces of West and East Java which had a production gain of 26 and 52 kt, respectively, between 2002 and 2007. On the contrary, production trend in Central Java is declining and stagnating. Starting with more or less same production capacity in 2002, East Java grew by 26% over the 6 years or at a rate two times faster than West Java; while in Central Java production diminished by over than 10% in the same time period.

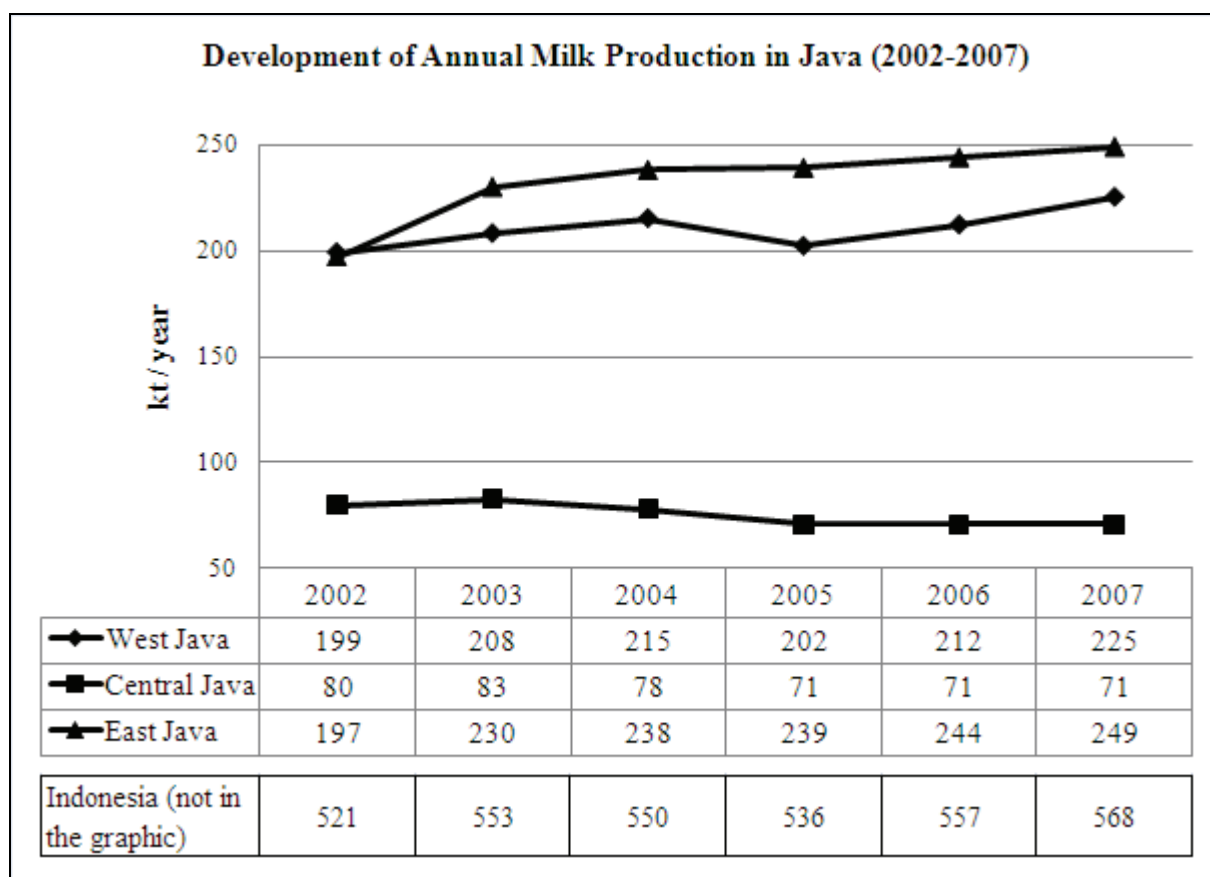


Figure 7-4 Development of milk production in Indonesia and Java Island (2002 – 2007)

Source: compiled and estimated from various sources⁹

7.5 Dairy farmers

Most of Indonesian dairy farmers are smallholder dairy farmers in rural areas in mountainous regions. Farm size is typically small with around 2-4 milking cows. The dairy cattle which are from Friesian Holstein breed or its crossing with local breed are reared in a small confinement

⁹ Dinas Peternakan Jawa Barat (2008a); Dinas Peternakan Jawa Tengah (2007a); Dinas Peternakan Jawa Timur (2008b); Direktorat Jendral Peternakan (2008); Badan Pusat Statistik (2009).

on the yard of the farmer's house. Forage grasses are gathered in a 'cut and carry' system: cutting and collecting grasses from the farmer's land, as well as along the sides of roads, irrigation ditches, forests or other such places¹⁰. Dairy farming is managed as a family business with 2-3 people working in the farm. Most dairy farmers are cooperative members¹¹, as they are dependent on cooperative services particularly for business linking to DPI. Besides supplying DPIs dairy farmers or cooperative sometimes also sell small amounts of fresh milk to small home industries, food hawkers or street vendors, and directly to local end consumers.

Currently, there is no official data on aggregate level about the quality of milk produced by dairy farmers, how many percents are classified into the respective milk grading-system imposed by the DPIs. However, according to Meylinah (2008, p. 3) fresh milk with lower bacteria content – or higher quality – is combined with imported SMP to produce full cream liquid milk and powdered milk; whereas those with higher bacteria content is processed into sweetened condensed milk.

In 2003 there were around 112,000 smallholder dairy farmers in Indonesia: around 24,000 in West Java; 37,000 in Central Java; 49,000 in East Java, and 2,000 outside Java (Direktorat Jendral Peternakan 2008). Assuming that at least 2 persons working in the farm and a typical family consists of 4 persons (parents and 2 children); the dairy sub-sector provides employment for at least around 224,000 workers¹² and a source of livelihood for around 448,000 people.

In view of livestock population Indonesia had in 2007 around 374,000 dairy cattle (see Figure 7-5). The largest population of around 139,000 cattle was in East Java, accounting for around 37% of the total population in Indonesia. Interestingly, the second largest population is in Central Java– instead of in West Java – with around 116,000 cattle (31%), despite the fact that Central Java produced only 12.5% of Indonesian total milk production. West Java ranked third with around 103,000 cattle (28%).

¹⁰ See Hutabarat et al. (1994) for further discussion on the general characteristics of Indonesian smallholder dairy farmers.

¹¹ According to Direktorat Jendral Peternakan (2008), in 2004 there were 341 private companies producing milk that are not member of any dairy cooperative.

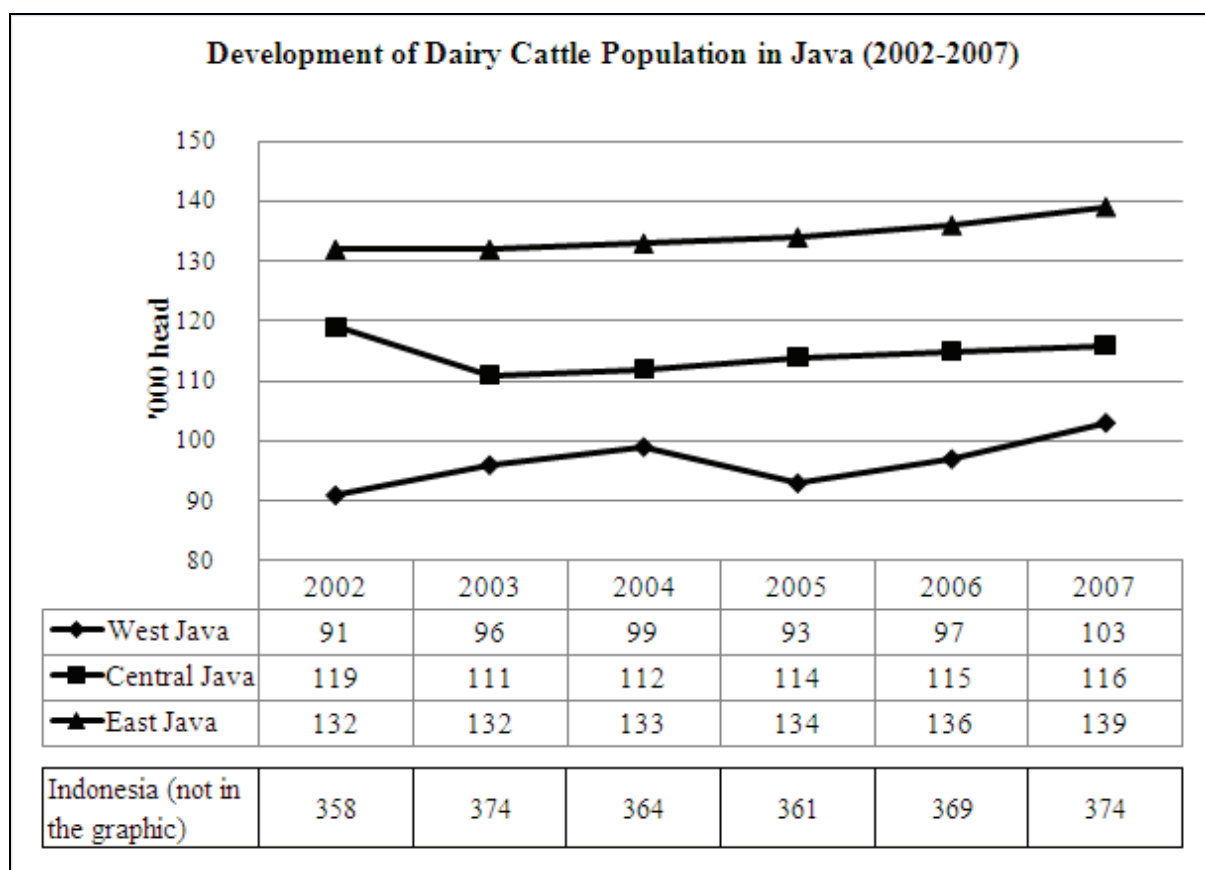


Figure 7-5 Development of dairy cattle population in Indonesia and Java Island (2002 – 2007)

Source: compiled and estimated from various sources¹³

The population of dairy stock in Indonesia did not changed much during 2002-2007, only less than 5% over a 6-year period. In 2003 – 2005 dairy stock even declined and picked up again afterwards. On the province level, only in East Java dairy population had increased constantly on average by around 1,500 heads per year or equal to 5% during the period 2002-2007. In the same period dairy population in West Java increased on average yearly by around 2,500 heads – albeit the moderate decrease in 2005 – or equivalent to 13% during the whole time period. On the contrary, population number in Central Java was, more or less, stagnating.

¹² According to Wagner et al. (2006, p. 4) 241,800 people were involved in on-farm fresh milk production.

¹³ Dinas Peternakan Jawa Barat (2008b); Dinas Peternakan Jawa Tengah (2007b); Dinas Peternakan Jawa Timur (2008a); Direktorat Jendral Peternakan (2008); Badan Pusat Statistik (2009).

Comparing the development of production (Figure 7-4) and of livestock population (Figure 7-5), it becomes obvious that productivity increase has taken place in Indonesian dairy sub-sector: while the production has grown by 9%, the population increase was only to less than 5%. The production increase in West Java (13% in 2002-2007) can attributed to the increased population number also by 13%; whereas in East Java the growth of dairy population by 5% has resulted in a production increase by 26% and thus signalling improved animal productivity. A peculiar case is Central Java in which production dropped by 10% and dairy population slightly decreased by 3%.

Drawing on the statistical data in the previous sub-chapters, the characteristic of dairy farm business in Indonesia is delineated in Table 7-3, comparing the situation in 2002 and 2007 (with the simplifying assumption: the number of dairy farms in 2002 and 2007 are the same).

Table 7-3 Characteristic of dairy farms in Indonesia on average values (2002 and 2007)

Province	Cattle per farm [head]		Daily milk production per farm [litre/farm]		Annual production per animal [litre/animal/year]	
	2002	2007	2002	2007	2002	2007
West Java	3.84	4.35	23	26	2,187	2,184
Central Java	3.29	3.21	6	5	672	612
East Java	2.70	2.85	11	14	1,492	1,791
Indonesia	3.29	3.44	13	14	1,455	1,519

Source: own calculation based on cited sources

At this point it is, again, important to emphasise, that due to the fact that the statistical data were not drawn from a single, official source but rather compiled from various sources (with sometimes contradicting figures) through meticulous triangulations, such numerical description of the reality should be treated as a delicate matter. Frequently there is no explicit definition about the parameter and the measurement method used: for example, the numbers of dairy cattle would include non-producing young stock, so that the so-called “average” production is underestimated¹⁴. Moreover, the amount of milk given to young stock is not considered in the “milk production” or reported to the cooperative staff during milk collection and thus causing the distortion of the data for animal productivity.

¹⁴ Cf. Moran (2007, p. 6)

7.6 Input suppliers

There are mainly 2 specific input suppliers for the dairy value chain, namely livestock and feedstuff provider. Livestock provider consists of those enterprises supplying calves, heifers, pregnant heifers, and artificial insemination. Livestock purchase takes place mainly in livestock market where buyers and sellers from different regions meet. The cattle traded in such places usually are not accompanied with any certificate or documentation of origin or pedigree. There are also private breeding companies¹⁵ offering dairy cattle with documented origin and high-quality genetics, but they have limited capacity to fulfil the demand of dairy cattle. Hence, imports have always been seen as a measure to increase livestock number. According to Direktorat Jendral Peternakan (2008) around 4.2 to 6.2 thousand cattle were imported yearly during 2003-2007. This data contained, unfortunately, no differentiation between beef and dairy cattle.

Feedstuff provider includes suppliers for forage (elephant grass, maize stover, green maize, etc.), concentrate feed and by-products (rice bran, wheat pollard, cassava, soybean curd, brewer's grain, etc.), and specially formulated concentrate. Forage and by-products are purchased on local marketplaces. Larger cooperatives produce formulated concentrate by themselves as a service for their members.

The service for artificial insemination is given by veterinarians or '*mantri*' (para-veterinarian) from local government agency, cooperative staff, or freelancers. Semen is supplied by Artificial Insemination Centre (*Balai Inseminasi Buatan – BIB*) in Lembang, West Java and Singosari, East Java; or by UIDC. Virtually in each village or sub-district veterinarian service is available. Apart from delivering artificial insemination, such specialists give veterinary service like health check, pregnancy check, as well as extension advice on technical matters.

7.7 Policy environment of Indonesian dairy value chain

Indonesian dairy sub-sector had been one of the agricultural sub-sectors heavily regulated by GoI (Bond et al. 2007, p. 7). The justification of such support lies on the perceived advantages of dairy sub-sector development, such as:

¹⁵ According to Direktorat Jendral Peternakan (2008) there were 8 breeding companies specialised for dairy cattle in West Java and 3 in Central Java (2004).

- providing a good basis for improvement of nutrition provision in the society,
- source of manure to supplement and/or substitute chemical fertilisers,
- providing a good alternative of income generation thanks to the continuous milk income,
- creates employment in rural areas, and
- means of saving foreign exchange through substituting import.

During 1980s and 1990s there were import programs for dairy cattle that were supported by government programs. Main sources of dairy cattle were from Australia and New Zealand. According to GKSI Jawa Timur (2008) more than 52 thousand dairy cattle were imported between 1979 and 1983 and then distributed to dairy cooperatives which were member of GKSI. According to Moran (2007, p. 6) 110 thousand were imported between 1979 and 1990. Such programs were accompanied by the introduction of artificial insemination with imported semen, extension programme, and loan programme for purchasing dairy cows.

In 1983 GoI enacted a national policy signed by the Minister of Agriculture, Industry, and Trade-Cooperative requiring DPIs to buy domestically produced milk apart from imported milk for their raw material. Designated to boost domestic dairy production, this policy – called *Busep* (*Bukti Serap*) or Proof of Absorption – regulates the ratio of imported and locally sourced milk. Nonetheless, this policy was abolished in 1998 through President Instruction No. 4/1998, since it was one of the requirements of IMF support programme for economic recovery in Indonesia during the economic and monetary crisis in Asia.

After the abolishment of *Busep* Indonesian dairy value chain still receives support from GoI, particularly from the local level (district or province), since many tasks and authorities of central government were decentralised to the local level in the course of regional autonomy processes. Apart from regular programs for epidemic prevention, vaccination, extension services, and artificial insemination carried out *Dinas Peternakan* or local livestock service; there are special programme for equipment (e.g. cooling machine) purchase, as well as loan programs with subsidised interest rate directed to dairy farmers and/or cooperatives for purchasing local or imported livestock.

Referring back to the Sub-chapter 5.6 about the interesting phenomenon of rapid production increase and sharp decline of import share in the domestic availability in the 80's, it became apparent that this phenomenon was the result of the policy change in the Indonesian dairy sub-sector. On the demand side, with the introduction of *Busep* – the regulation on the ratio of imported and locally sourced milk –, dairy industries were forced to reduce their raw material

imports and to increase supply from local sources. On the supply side, domestic production was then boosted by the massive import programs of dairy cattle including all supporting measures of extension services, artificial insemination, and loan programs. All of these activities were driven by GoI. This condition persisted until 1998 – when the policy was finally lifted due to IMF’s requirement. The abolishment of this policy led to the resurgent imports of raw material for the DPIs (see Figure 5-2). This case demonstrates how government-driven support policies have not created sustainable impacts of structural development for the VC-operators, i.e. cooperative, dairy farmers, and input suppliers.

7.7.1 Regulation for imports of dairy products

Table 7-4 Import tariffs of various dairy products

Product Type	Bound Tariff ¹⁶ [%]	Applied Tariff ¹⁷ [%]
Milk and cream, not concentrated or sweetened	40	5
Milk and cream, concentrated or sweetened	210	10
Yoghurt	40	10
Buttermilk	210	5
Butter	40	5
Fats and oils derived from milk	210	5
Cheese	40	5

Source: Bond et al. (2007, p. 17)

According to Bond et al. (2007) import of dairy products in Indonesia must face a number of regulations. Only specific companies appointed by GoI are entitled to procure finished dairy products. Prior to importing, the label of all dairy products – both packaged goods for end consumers and bulk products for further processing – must be approved first. Additionally, imported dairy products must be accompanied by original halal certificate. Like all food imports, imported dairy products are subject of test and control by Agency for Drug and Food Control (*Badan Pengawas Obat dan Makanan – BPOM*).

¹⁶ ‘Bound tariff’ is the maximum rate of tariff allowed by World Trade Organization (WTO) to any member state for imports from another member state.

¹⁷ ‘Applied tariff’ is the tariff rate actually used for imports.

Regarding import tariffs there are different tariffs applied for different dairy product (see Table 7-4). Notwithstanding the very high level of the bound tariff, the applied tariff for dairy products is mostly 5%, except some processed products like yoghurt and concentrated or sweetened milk and cream which are subject to a higher applied tariff of 10%.

7.8 Concluding remarks

The dairy value chain in Indonesia mainly consists of livestock and feedstuff providers, dairy farmers, cooperatives, DPIs, and distributors who exercise the chain functions of specific input provision, dairy production, collecting and transporting, dairy processing, and distribution, respectively. More than half of all DPIs (27) reside in West Java (15). Nevertheless, there are only 5 DPIs possessing 90% of the total sales volume and thus indicating the concentration of market power in the value chain. East Java owns the largest number of cooperatives and dairy farmers accounting for 50% and 45%, respectively, of the total number on Java Island. The cooperatives have 2 different organisational form and show different performance in daily output – only small part, i.e. 25%, of them produce more than 10 ton fresh milk daily. Fresh milk production in West and East Java has been increasing during 2002-2007; whereas in Central Java declining and then stagnating. Also, the fresh milk production in Central Java is the lowest, despite this fact that the number of dairy farmers and dairy cattle in Central Java is higher than West Java. Characterised in milk production per farm and per animal, Central Java has thus the lowest productivity among all. Specific input suppliers for the dairy value chain are livestock and feedstuff providers.

Indonesian dairy sub-sector had been heavily regulated – or supported by policy – due to some advantages perceived in the promotion of dairy sub-sector. Apart from import regulation, there were national policies enacted in the 80s and 90s. They were directed to boost domestic supply of fresh milk through massive dairy cattle import programme, as well as to promote domestic demand through *Busep* forcing DPIs to source milk locally. These policies were, nevertheless, abolished in 1998. The changes of these policies were then the causes of the rapid rise of domestic production and decrease of imports in the 80's, as well as the resurgent imports in the end of 90s.

At this point, it can be concluded that dairy value chains in the different regions face the same challenge with the absence of the support policy. Nevertheless, as it has been demonstrated in this chapter, West and East Java exhibits improving performance; whereas Central Java indicates stagnation and decline. This difference in the development pattern, or the upgrading, of

the value chain will be further discussed in the next chapters. Some indications in this chapter – e.g. lower milk output albeit larger cattle population and larger farmer number in Central Java – will be taken up again in the discussion. The explanation of the different upgrading performance will be based on the difference of governance system prevailing in the different regions.

8 Comparative Cases of Higher and Lesser-Performing Systems

This chapter provides a closer look at the dairy production centres in West, Central, and East Java. The first sub-chapter identifies the location of the production centres on Java Island and characterises these production centres using statistical information. The second sub-chapter provides further description of the production centres and distinguishes them into lesser and higher-performing interaction system. The initial and end condition of these systems are compared to highlight the differences of the dairy value chain with and without upgrading. As the differences to be explained entail high degree of complexity, the Macro-Micro Model is modified to simplify the visual presentation and enhance the legibility of the model. The modification is briefly described in the last sub-chapter.

8.1 Concentration of production centres

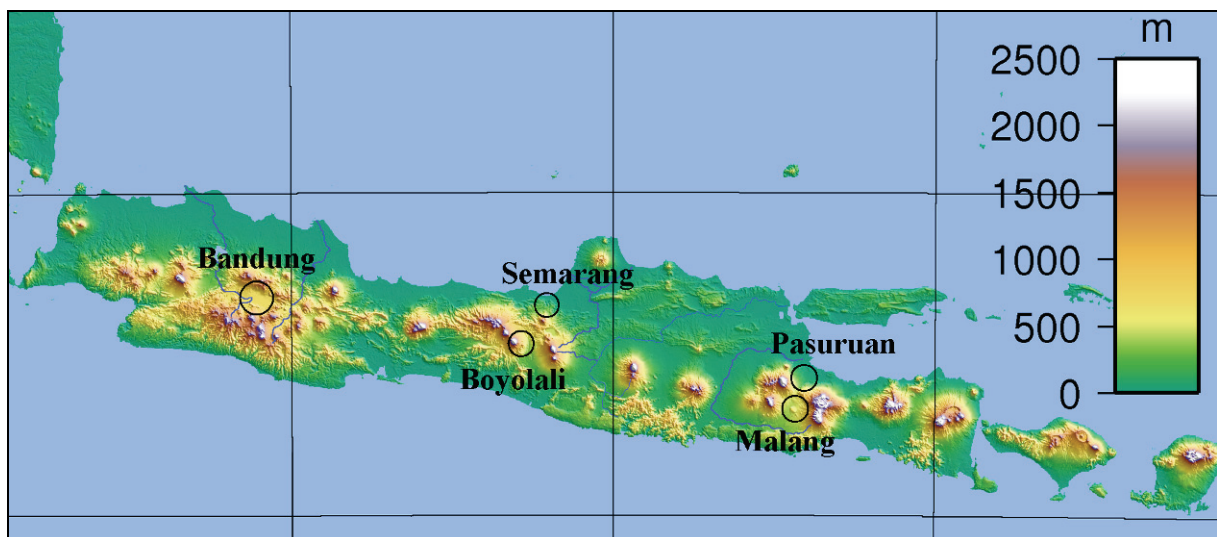


Figure 8-1 Location of dairy production centres on Java island

Source: modified from www.wikipedia.com (2007)

Instead of being widespread across the island, smallholder dairy farmers are concentrated in certain regions, i.e. Bandung, Semarang, Boyolali, Pasuruan, and Malang (see Figure 8-1). These regions are situated on mountainous or elevated areas, at least 500 m above the sea level, where temperature is relatively lower and thus more conducive for keeping dairy cattle.

In 2007 the largest milk-producing region in West Java is the District of Bandung which accounts around 50% of the total production and 50% of the total cattle number of the province

(see Table 8-1 and Table 8-2). The main production centres in Central Java are the District of Boyolali and Semarang constituting around 40% and 25% of the total production as well as 50% and 25% of the total dairy cattle population, respectively, of the province. In East Java the Districts of Pasuruan and Malang hold each around one third of the total production and of total population number of the province.

Table 8-1 Development of annual production capacity [kt] of milk-production centres

Location	2002	2003	2004	2005	2006	2007
District of Bandung	92	95	97	110	116	117
Other districts/municipalities in West Java (22)	107	113	118	92	96	108
Province of West Java	199	208	215	202	212	225
District of Boyolali	31	31	31	27	29	29
District of Semarang	25	26	24	21	18	20
Other districts/municipalities in Central Java (33)	24	25	23	22	24	22
Province of Central Java	80	83	78	71	71	71
District of Pasuruan	61	71	77	78	79	81
District of Malang	67	76	81	82	86	87
Other districts/municipalities in East Java (36)	70	82	80	79	80	81
Province of East Java	197	230	238	239	244	249
Indonesia	521	553	550	536	557	568

Source: compiled and estimated from various sources¹

Among 95 milk-producing districts the District of Bandung, Malang, and Pasuruan are by far the largest centres producing together at least 50% of the domestic production (2007). These three districts and the District of Boyolali are in view of cattle number the largest with around 50 thousand cows in each area. The District of Boyolali shows a peculiar case here, as it has the largest number of dairy stock, yet the smallest production capacity: With 29 kt annual production and 59 thousand dairy cattle, the average production per animal amounts to 1.3 litres per day or 499 litres per year and thus is even lower than the average of Central Java of

¹ Dinas Peternakan Jawa Barat (2008a); Dinas Peternakan Jawa Tengah (2007a); Dinas Peternakan Jawa Timur (2008a); Direktorat Jendral Peternakan (2008); Badan Pusat Statistik (2009).

612 litres per year²; as such, Boyolali has the lowest animal productivity among the dairy production centres³.

Table 8-2 Development of dairy population [000 head] of milk-production centres

Location	2002	2003	2004	2005	2006	2007
District of Bandung	n/a	n/a	n/a	n/a	n/a	54
Other districts/municipalities in West Java (22)	n/a	n/a	n/a	n/a	n/a	49
Province of West Java	91	96	99	93	97	103
District of Boyolali	64	56	58	59	60	59
District of Semarang	28	28	31	32	33	32
Other districts/municipalities in Central Java (33)	27	27	23	23	22	25
Province of Central Java	119	111	112	114	115	116
District of Pasuruan	40	41	43	43	44	45
District of Malang	44	44	45	46	47	49
Other districts/municipalities in East Java (36)	48	47	45	45	45	45
Province of East Java	132	132	133	134	136	139
Indonesia	358	374	364	361	369	374

Source: compiled and estimated from various sources⁴

By zooming-in unto the district aggregate it also became obvious that different districts – also in the same province – showed differentiated development patterns during 2002-2007. While in general most districts, in particular Boyolali, exhibited the same trend of stagnation and slight decline with regard to production and dairy cattle population; the District of Bandung, Pasuruan, and Malang represented an exceptional case by growing constantly on average by 4-5 kt annually. Similarly, the changes in dairy population on the district aggregate were also differentiated. In the District of Pasuruan, Malang, and presumably also Bandung, dairy cattle population steadily increased between 2002 and 2007 on average by 1,000 heads annually.

² See Table 7-3

³ See Sub-Chapter 10.2.3, in particular Figure 10-12, for the explanation of this aggregate condition

⁴ Dinas Peternakan Jawa Barat (2008b); Dinas Peternakan Jawa Tengah (2007b); Dinas Peternakan Jawa Timur (2008b); Direktorat Jendral Peternakan (2008); Badan Pusat Statistik (2009).

The result of the statistical analysis on the district aggregate reinforces the justification of the selection of comparative cases as described in Sub-chapter 4.3: While the district of Boyolali represents the lower and stagnating system, Bandung and Pasuruan the higher and improving system.

8.2 Comparative cases: Lesser and higher-performing interaction system

The strategy of using comparative cases to explain why some dairy production centres thrived while others stagnated provide greater opportunity to cross-check and verify the conclusions made for each case. To differentiate these systems the term ‘lesser-performing interaction system’ and ‘higher-performing interaction system’ is introduced here. The term ‘interaction system’ refers to a system of interdependencies between two different categories of VC operator, namely between DPIs and their supplying dairy cooperatives as well as between dairy cooperatives and their dairy farmer members. For the lesser-performing interaction system empirical data were collected from 3 cases in district Boyolali, Central Java; whereas for the higher-performing interaction system 1 case in district Bandung, West Java and 2 cases in district Pasuruan, East Java.

Both higher and lesser-performing interaction system had in the late 1990s, more or less, the same condition of low and stagnating performance – the initial condition. Many authors have examined the low performance of Indonesian dairy industry and investigated the factors inhibiting its further development from various analytical perspectives. For example, Moran (2007) and Moran (2008) provide an extensive analysis particularly on the technical aspect of dairying practices and milk handling, while Stanton, Emms and Sia (2005) a comprehensive strengths, weaknesses, opportunities, and threats (SWOT) analysis covering diverse aspects of economic, policy, technology and research and many others. Riethmuller et al. (1999b) conducted a survey in 1996 among officials – i.e. government officials from the Ministry of Agriculture and Directorate General of Livestock Services, scientists from Centre for Agro Socio-Economic Research, and VC-operators representing DPIs, dairy cooperatives, and UIDC – to identify the problems and weaknesses of Indonesian dairy industry. The most frequently mentioned off-farm problem was ‘cooperative management’, followed by ‘lack of incentive’, presumably, of cooperatives in improving their conditions and practices. Interestingly, the weaknesses identified were also mostly at the cooperative level: ‘relationship between farmers and cooperatives’, ‘corruption within cooperatives’, and ‘management of cooperatives’. These findings are supported by testimony of a cooperative leader:

Our cooperative was established in 1971 and developed well until 1979. But afterwards its performance had been declining and reached its nadir in 1998 because of increasing default loans and weak management. (Coop 1, higher performance)

Only after early 2000s consecutively progressive changes took place in the higher-performing interaction system resulting in higher and improving performance – the end condition. On the contrary, hardly any fundamental improvement came about in the lesser-performing interaction system – the end condition resembled the initial condition. This does not mean, however, that there were no efforts and actions undertaken to improve the low and stagnating performance, but the results of the undertakings were just discouraging. It can thus be said that the distinguishing line between both systems is that in the higher-performing interaction system VC upgrading successfully took place, whereas in the lesser-performing interaction system it did not.

The most prominent indicators for measuring the performance of the interaction systems are the milk quality, which is determined by the bacterial contamination (milk grade) and content of total solid (TS), and milk price. In lesser-performing interaction system the bacterial contamination persisted from early 2000s to 2008 in the range of 5 – 15 millions cfu/ml⁵ indicating low milk hygiene. The TS content has also not improved and remained in the range of 10% – 11%. Even during the “turbulence time”⁶ it dropped below 10%, obviously indicating milk adulteration with water. In 2006, the milk price paid by DPIs to UIDC Central Java was around IDR 2,100 per litre milk; whereas milk price at cooperative level amounted to around IDR 1,700 and at farmer level around IDR 1,400 per litre milk.

In comparison, one of the higher-performing cooperatives stated its upgrading achievements in 2006 as follows:

Currently, 75% of our milk achieves the milk grade 1⁷ [less than 250,000 cfu per ml milk]. In average, we receive IDR 2,500 from the DPI and the dairy farmers receive IDR 2,100 from us. This achievement was attainable in a relatively short time period of, more or less, 5 years. (Coop 1, higher performance)

⁵ Cf. Moran (2007, p. 38)

⁶ See Sub-chapter 10.2.1.1 for further description of the “turbulence time”.

⁷ Cf. Wouters (2009, p. 15)

The price already included the bonus for TS content which was averagely 12.8%; even in certain areas it was above 13%. The daily milk output of the cooperative has also improved from 56 kt in 1996, to 86 in 2001, and to 110 tonne in 2006. Another higher-performing cooperative has also achieved considerable improvement in increasing milk hygiene. In 2006 85% of the milk output contained less than 0.5 million cfu/ml (milk grade 1). As for the milk price, the cooperative received on average IDR 2,400 from the DPI and paid its members IDR 2,000 per litre milk.

8.2.1 End condition: Interaction system between DPIs and cooperatives

Within the interaction system between DPIs and cooperatives the differentiating factor between both systems is that in higher-performing interaction system an intensive cooperation was established between DPIs and their supplying cooperatives to achieve higher quality standards. Table 8-3 summarises the main characteristics of the end condition with and without upgrading⁸. Why upgrading has occurred in some cases and not in other cases is the main question dealt with in Chapter 9.

Table 8-3 Overview of upgrading in the interaction system between DPIs and cooperatives

Aspect	End condition with upgrading	End condition without upgrading
Product upgrading	Lower bacterial contamination, higher TS content, higher milk price	Higher bacterial and adulterants contamination, lower TS content, lower milk price
Process upgrading within a chain link	DPIs: Increased cost efficiency due to higher-quality milk as raw material Coops: Introduction of improved technology for cooling plants and other milk equipment	DPIs: Lower-quality milk with higher technical costs Coops: Traditional milk handling with low technology level inadequate for producing high-quality milk
Process upgrading between chain links	Improved flow of technical information from DPIs to supplying cooperatives More transparent communication between both parties Joint quality monitoring	Standard information flow through buyer/seller relation
Functional upgrading	DPIs provide technical (TA) and financial assistance (FA) to cooperatives	DPIs provide no TA and FA

Source: own compilation

8.2.2 End condition: Interaction system between cooperatives and dairy farmers

⁸ See Sub-chapter 2.1 for the typology of upgrading used in the table.

The VC upgrading took place within the interaction system between dairy cooperatives and dairy farmers covers a wide range of aspects. Table 8-4 provides the summary of the upgrading aspects in key words.

Table 8-4 Overview of upgrading in the interaction system between coops and dairy farmers

Aspect	End condition with upgrading	End condition without upgrading
Product upgrading	Lower bacterial contamination, higher TS content, higher milk price	Higher bacterial and adulterants contamination, lower TS content, lower milk price
Process upgrading within a chain link	Coops: Improved MCCs, cooling plant, food-grade piping system, laboratory, SOP-oriented milk handling Increased organisational efficiency, focus on developing dairy business, fewer inactive member, lower propensity for corruption, highly motivated leaders and staff Dairy farmers: adoption of GDFP, more resources allotted for dairy farm (equipment, feedstuff, shed, etc.), higher animal and farm productivity, increasing number of dairy farmers	Coops: No cooling plant and laboratory, inadequate MCCs and piping system, inadequate SOP for milk handling High number of inactive members, focus on maximising surplus, higher propensity for malfeasance, low performance of coop leaders and staff Dairy farmers: prevalence of milk adulteration, traditional dairy practices, performance stagnation on subsistence level, opting for suckler cow, low animal and farm productivity, declining number of dairy farmers
Process upgrading between chain links	Enforced quality regulations with quality/price mechanism, socio-culturally adjusted training and monitoring system	Weak quality regulation with absent quality/price mechanism
Functional upgrading	Provision of services: training / extension and monitoring, veterinary service, production of fresh forage and concentrate feed, water reservoir	Limited provision of collective service: occasional extension system and monitoring

Source: own compilation

Figure 8-2 and Figure 8-3 provide concrete illustrations of the conditions of and the striking differences between the higher and lesser-performing interaction system. Further explanations on these conditions are dealt with in Chapter 10.



Figure 8-2 Illustration of higher-performing interaction system

Source: Moran (2007, p. 4) and own compilation

The left picture above shows an example of heat water installation at a milk collection centre (MCC) which is used by dairy farmers for cleaning their milk cans following a milk delivery. The right picture above shows a clean, well-managed cow stall equipped with rubber mat for protection against knee injuries, adequate water for cleaning, and a ditch for effluent management.



Figure 8-3 Illustration of lesser-performing interaction system

Source: Moran (2008, p. 22), Moran (2007, p. 4), and own compilation

The left picture above shows the traditional feeding management of giving dairy cows slurry concentrates mixed with water and chopped papaya trunk which is used to supplement limited forage supply in dry seasons. The middle picture above shows a dairy farmer – while smoking – milking a cow using plastic bucket in a dirty cow stall. The right picture above shows rusty milk can tighten with black-coloured plastic bag used for delivering milk to a MCC.

8.3 Modified visual presentation of Macro-Micro Model

The visual presentation of the analytical framework of Macro-Micro Model assumes that the explanation is done in one step, namely from ‘Social phenomena 1’ to ‘Social phenomena 2’

(see Figure 8-4) and that the individuals have single perception and single action⁹. The cases to be explained in Chapters 9 and 10, however, are far more complex. There are different social phenomena – the institutional aspects of the interaction system – influencing the individuals. A single institutional aspect can result in several types of perception which, in turn, lead to different types of action. Also, the explanation of the end situation (end outcome of the interaction system) is not done in one step, but through several intermediate outcomes. Based on these conditions, the visual presentation of the Macro-Micro Model is modified as follows (see Figure 8-4).

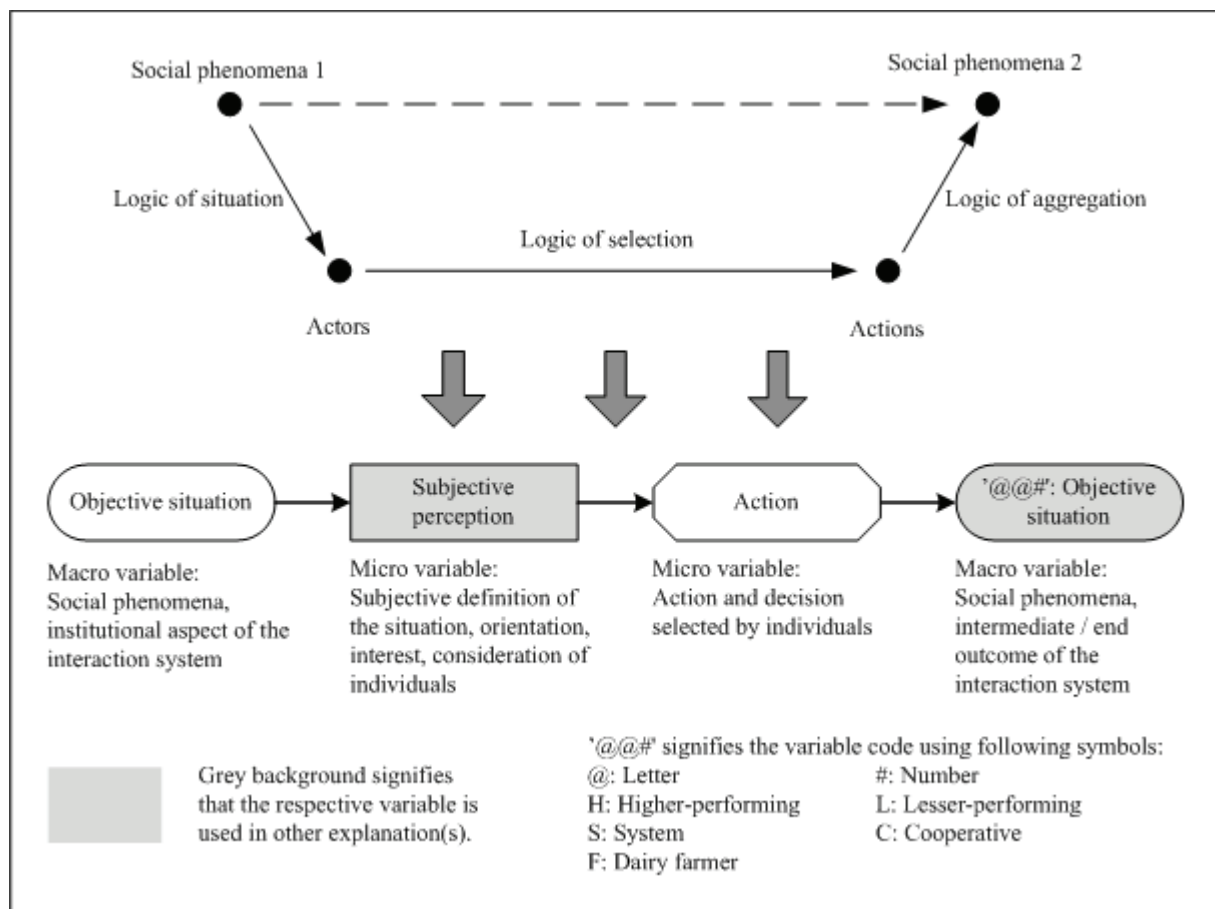


Figure 8-4 Modification of the visual presentation of Macro-Micro Model

Source: own compilation

⁹ Figure 3-6 presents an extended version of Macro-Micro-Model by incorporating 2 different types of actors including their perception and action.

There are basically three different shapes used in the modified visual presentation, i.e. rounded rectangle ('objective situation'), rectangle ('subjective perception'), and elongated octagon ('action'). The macro variable 'objective situation' represents the general situation and institutional aspect of the system. The micro variable 'subjective perception' and 'action' replaces the 'logic of situation' and 'logic of selection' respectively. As the outcome of the action – the 'logic of aggregation' – is also a macro variable, it is depicted by rounded rectangle. A shape with grey background signifies that the respective variable is used in the explanation of other intermediate outcome(s). A specific coding is used for some of the macro variables with grey background to explicitly indicate the interplay of some macro variables in the interaction system. The symbol 'S' indicates that the macro variable is a given objective condition in the system beyond the influences of the actors. The symbol 'C' indicates that the macro variable is an outcome of actions by cooperatives and that this variable influences dairy farmers. The opposite applies to the symbol 'F'. For better understanding of the suggested modification, concrete examples can be found in directly Chapters 9 and 10.

9 Interaction System between DPIs and Cooperatives

Chapters 9 and 10 explain the relationship between the governance and the performance of the observed links of the Indonesian dairy VC, namely the interaction system between DPIs and cooperatives as well as between cooperatives and dairy farmers. The analysis starts with a brief overview of the historical development of the VC operators. Then, the prevailing governance system of each interaction system is analysed using the theoretical framework of extended theory of institution – as delineated in Sub-chapter 3.4 – with particular emphasis on the regulative, normative, and cultural-cognitive aspects. Then, the causal relationships between the governance and the performance of the respective chain link – the macro variables – are explicated based on the analytical framework of methodological individualism as described in Sub-chapter 3.6. The explanation premises on the subjective perception and selected action of the different categories of VC operators – the micro variables. The interaction and aggregation of the selected actions, in turn, lead to the end outcome. To produce sharper and more verifiable conclusions, the analysis compares successful and unsuccessful cases of upgrading – the higher and lesser-performing interaction system.

9.1 Brief history of DPIs

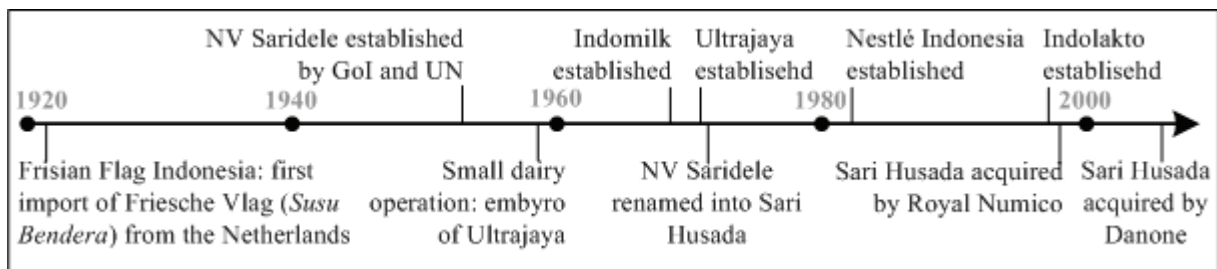


Figure 9-1 Timeline: Historical development Dairy Processing Industries in Indonesia

Source: own compilation

In concise format Figure 9-1 presents the historical development of the five-largest DPIs in Indonesia¹, among which three are owned by multi-national companies:

¹ See Table 7-1 for the 5-largest DPIs in Indonesia and their share in domestic fresh milk consumption.

- i. **Nestle:** Despite the fact that Nestlé’s products, e.g. “Susu Tjap Nona”, had already been known in Indonesia at the end of the 19th century, the subsidiary Nestlé Indonesia was first established in 1971 as a further development of the company Food Specialties Indonesia.
- ii. **Frisian Flag Indonesia:** The operation of Frisian Flag Indonesia (FFI) started in 1922 with the import of “*Friesche Vlag*” (“*Susu Bendera*”) milk brand from Cooperative Condensfabriek Friesland of the Netherlands. FFI is a subsidiary of Royal FrieslandCampina, a multinational company producing dairy products.
- iii. **Indomilk / Indolakto:** Indomilk established in 1969 and Indolakto in 1997 belonged to the company group of Indofood. During the economic crisis both company were handed over to Indonesian Bank Restructuring Agency and then sold to Bakti Maju Bersama Abadi of Marison NV. After several acquisitions by different companies, both companies were bought back by Indofood in 2008.
- iv. **Ultrajaya:** Starting with a small dairy operation in 1958 Ultrajaya Milk Industry and Trading Company was established in 1971. At present, this company sells 90% of its total production volume on domestic market.
- v. **Sari Husada:** In collaboration with United Nations GoI established NV Saridele in 1954 to support the programme of nutrition improvement, in particular of protein supply. Following the acquisition by Tiga Raksa, the name NV Saridele changed into Sari Husada in 1972. Sari Husada started an alliance with Royal Numico NV in 1998. At present, the company is under Danone after Danone Group acquisitioned Royal Numico.

9.2 Institutional framework

9.2.1 Regulative aspect: Regulations for product and process quality

The regulatory framework specific to the dairy VC concerns the technical requirements for process and product quality parameters. For the process quality regulation DPIs establish the so-called ‘Standard Operating Procedures’ (SOPs) to define the technical requirements in milk handling by cooperatives and dairy farmers². Of outmost importance in the product quality regulation is the determination of the milk price paid to the cooperatives based on the qual-

² See Sub-chapter 10.3.1.1 for further description of the process quality regulation.

ity³ parameters of the milk delivered. Relevant parameters for the price determination are concisely summarised in the following table⁴:

Table 9-1 Parameters relevant for the determination of milk price by DPI

Parameter	Description	Test method ⁵
Milk grade ⁶	Degree of bacterial contamination or germ content per ml fresh milk	Total Plate Count (TPC)
Milk composition	Indicated by: Total Solid (TS) Fat content Protein content ⁷ or solid non-fat (SNF) which includes protein, lactose, and minerals	Lactometer / lactoscan Gerber test / sulphuric acid SNF = TS – fat content
Milk temperature	Milk temperature on arrival at the DPI	Thermometer

Source: own compilation and adapted from Moran (2007)

Each DPI applies a different system of price determination for its suppliers, but in general the aforementioned parameters are widely used. Usually, a ‘base price’ – i.e. the “normal” price without bonus or penalty – is set and with decreasing germ content and increasing milk composition incremental price bonus is given. Correspondingly, price penalty applies for the opposite. Apart from the aforementioned parameters determining the milk price there are also rejection criteria upon arrival at the DPI’s gate: floccules indicating high bacterial contamination, indication of antibiotics or other chemicals, indication of adulterants like sugar or some other additive (used to increase specific gravity / milk density), and added water to increase milk volume (fat content below 3%).

³ The term ‘milk quality’ generally used in Indonesia covers both ‘milk hygiene’ and ‘milk composition’. In other countries, such as Australia, ‘milk quality’ refers specifically to ‘milk hygiene’, namely the levels of milk contamination by bacteria, chemicals, or any other adulterants (cf. Moran 2007, pp. 25–28).

⁴ Cf. Moran (2007, pp. 34–36); Moran (2008, p. 22); Firman (2008, p. 6)

⁵ See Moran (2007, pp. 25–28) for more elaborate description of the listed as well as other applicable test methods.

⁶ The term ‘milk grade’ is a sub-category of ‘milk hygiene’ and is widely used in Indonesia to refer specifically to bacterial contamination.

⁷ With lactose and mineral contents being relatively stable – 4.7% and 0.7%, respectively – the protein content can be estimated as follows: Milk protein = SNF – 5.4%. See Moran (2005, p. 54).

Table 9-2 Parameters relevant for the determination of milk price by DPI

2007 ^a			2001 ^c					
Milk grade [million cfu/ml]	Milk price [IDR/litre]	Milk price ^b [USD/litre]	Milk grade [million cfu/ml]	Bonus / penalty [IDR/litre]	TS [%]	Bonus / penalty [IDR/litre]	Temp [°C]	Bonus / penalty [IDR/litre]
< 0.25	3,047	0.336	< 1	+ 100	< 10.7	- 25	> 8	- 10
0.25 - 0.50	2,947	0.325	1 - 3	+ 75	10.7 - 10.9	- 20	6 - 8	0
0.50 - 1.00	2,847	0.314	3 - 5	+ 50	10.9 - 11.0	- 15	< 6	+ 10
^{a)} This list only contains the base prices based on bacterial contamination, but not the bonus/penalty parameters. ^{b)} USD/IDR rate as of July 2007: 1 USD = 9,072 IDR			5 - 7.5	+ 40	11.0 - 11.1	- 10		
			7.5 - 10	+ 30	11.2 - 11.3	- 5		
			10 - 15	+ 20	11.3 - 11.4	0		
			15 - 20	+ 10	11.4 - 11.6	+ 20		
			20 - 30	0	11.6 - 11.9	+ 30		
			30 - 40	- 10	> 12	+ 40		
			> 40	-20				
			^{c)} This list only contains the bonus/penalty parameters, but not the base price.					

Source: adapted from Meylinah (2007) and Moran (2007)

Over time the system of price determination has been changing. According to Stanton, Emms and Sia (2005, pp. 33–39), until 1983 milk payment was based solely on the volume. Gradually, product quality parameters were introduced – starting from fat content, to SNF, to TS, to milk grade, and to antibiotic contamination – from 1984 to 2004. The grading and threshold of bacterial contamination could also be shifted from less to more differentiated, or vice versa. The same also applies for the base price (see Table 9-1 and Table 9-2). The whole price determination system is subject to regular review in negotiation processes between DPIs, GKSI, and GoI; but due to power asymmetry in the dairy value chain DPIs have been able to enforce their decision most of the times. Obviously, DPIs as the ‘rule-setter’ utilise the price determination system and other regulations, such as delivery quota, as an instrument of influencing or controlling the behaviour of their suppliers: encouraging the production of high quality milk, discouraging the production of lower quality milk, and increasing/lowering milk delivery according to their supply need.

Table 9-3 Examples of price determination system of a DPI in East Java⁸

⁸ The data for 2006 contains the base price only, whereas for the other years only the bonus/penalty parameters.

2006		2003		2002	
Milk grade [million cfu/ml]	Milk price [IDR/litre]	Milk grade [million cfu/ml]	Bonus / penalty [IDR/litre]	Milk grade [million cfu/ml]	Bonus / penalty [IDR/litre]
< 0.5	2,400	< 1	+ 150	< 1	+ 100
0.5 - 1.0	2,300	1 - 3	+ 75	1 - 3	+ 50
1.0 - 2.0	2,100	3 - 6	0	3 - 6	- 25
2.0 - 4.0	1,910	6 - 10	- 75	6 - 8	- 50
4.0 - 5.0	1,675	> 10	-150	8 - 10	- 100
> 5.0	1,425	Temp [°C]	Bonus / penalty [IDR/litre]	> 10	-150
		> 8.5	-10		
2001		2000		1999	
Parameter	Bonus / penalty per % incremental [IDR/litre]	Milk grade [million cfu/ml]	Bonus / penalty [IDR/litre]	TS [%]	Bonus / penalty [IDR/litre]
Fat [%]	144	< 1	+ 100	< 10.9	Rejected (?)
SNF [%]	131	1 - 4	+ 75	< 11.6	- 40
Base milk price (3.9% fat content, 7.9% SNF, and 11.8% TS): IDR 1,480		4 - 6	nil	11.6 - 11.8	- 20
		6 - 10	- 25	11.8 - 12.0	nil
		> 10	- 100	12.0 - 12.5	+ 40
				> 12.5	+ 60

Source: adapted from Nugraha (2007) and Moran (2007)

Given the imbalance of market power, cooperatives tend to be a ‘rule-taker’ and have virtually small influence in the setting of quality regulations. This is exemplified by a case of lesser-performing cooperatives in mid 2008: While the cooperatives were still struggling to improve the hygiene of processes undergone by the milk to achieve higher milk grade and thus higher milk price, DPIs suddenly altered the determinant parameter for the milk price from the bacterial contamination to TS content, thereby nullifying the ongoing quality-improvement measures of the cooperatives. This alteration was an attempt from DPIs to loosen their own quality criteria, so that they could absorb lower quality milk, as they were contending for locally produced fresh milk on account of the surging price of imported raw material supplies – the “turbulence time”⁹.

The monitoring of the quality regulations is carried out by the DPIs themselves; third party monitoring is not observable. For the product quality DPIs test every milk delivery in their

⁹ Cf. Sub-chapter 10.2.1.1 and 10.2.2.3

own laboratory, whereas for the process quality DPIs employ technical specialists as field officer that visit cooperatives and dairy farmers, inspect their dairying practices, and give them technical recommendations as well as warnings. Having the market power in possession, DPIs are also able to back-up the enforcement of rewards and punishments. For example, one DPI performs quality audit every 6 months to safeguard the quality of product and process. Based on a specified technical checklist the DPI assesses its suppliers and gives a point for every failure. The total sum of the points is used to determine the severity of penalty to be given. The most severe penalty for the suppliers is the application of the price for the lowest milk grade (1,400 IDR per litre milk in 2006) for 6 months or even the termination of the business relation.

Additional to DPIs' own regulations there are other binding regulations to the dairy sector, yet these are perceived not to be influential. Via Agency for Drug and Food Control (*Badan Pengawas Obat dan Makanan* – BPOM) GoI defines the standards for product and process quality to ensure food safety. The agency only intervenes in the case of food scandals or outbreak of diseases. Also, DPIs should obtain the Halal Certificate from Indonesian Ulama Council (*Majelis Ulama Indonesia* – MUI), as the majority of the end consumers in Indonesia are Moslems. However, these standards apply solely to the end product and the manufacturing processes at DPIs, but not to the intermediary product and its production or handling processes, i.e. the production of fresh milk by dairy farmers and the handling by cooperatives. Moreover, these regulations are perceived not to be stringent by the DPIs, as it is expressed by a field inspector of a DPI:

The quality standards imposed by the government are minimal; our own company standards are much higher. Anyway, you just need to acquire the certificate once, which is not so difficult. The monitoring is also not frequent, perhaps once a year or so. (DPI 3)

Other standards that might be important to the dairy sub-sector such as organic standards or certain consumer protection standards are virtually non-existent.

9.2.2 Normative and cultural-cognitive aspect: Limited significance

The role of normative and cultural-cognitive aspect in the interaction system between DPIs and cooperatives appears to be minimal. Individuals from both parties are not situated in the same social community. Their interaction is limited solely to business relation. Therefore, they do not share particular norms or habits. However, against the background of prevalence opportunistic behaviour and weak law enforcement in general, the issue of trust and trustwor-

thinness is a fundamental concern in the interaction system. This is explained in the following sub-chapters.

9.3 Higher-performing interaction system

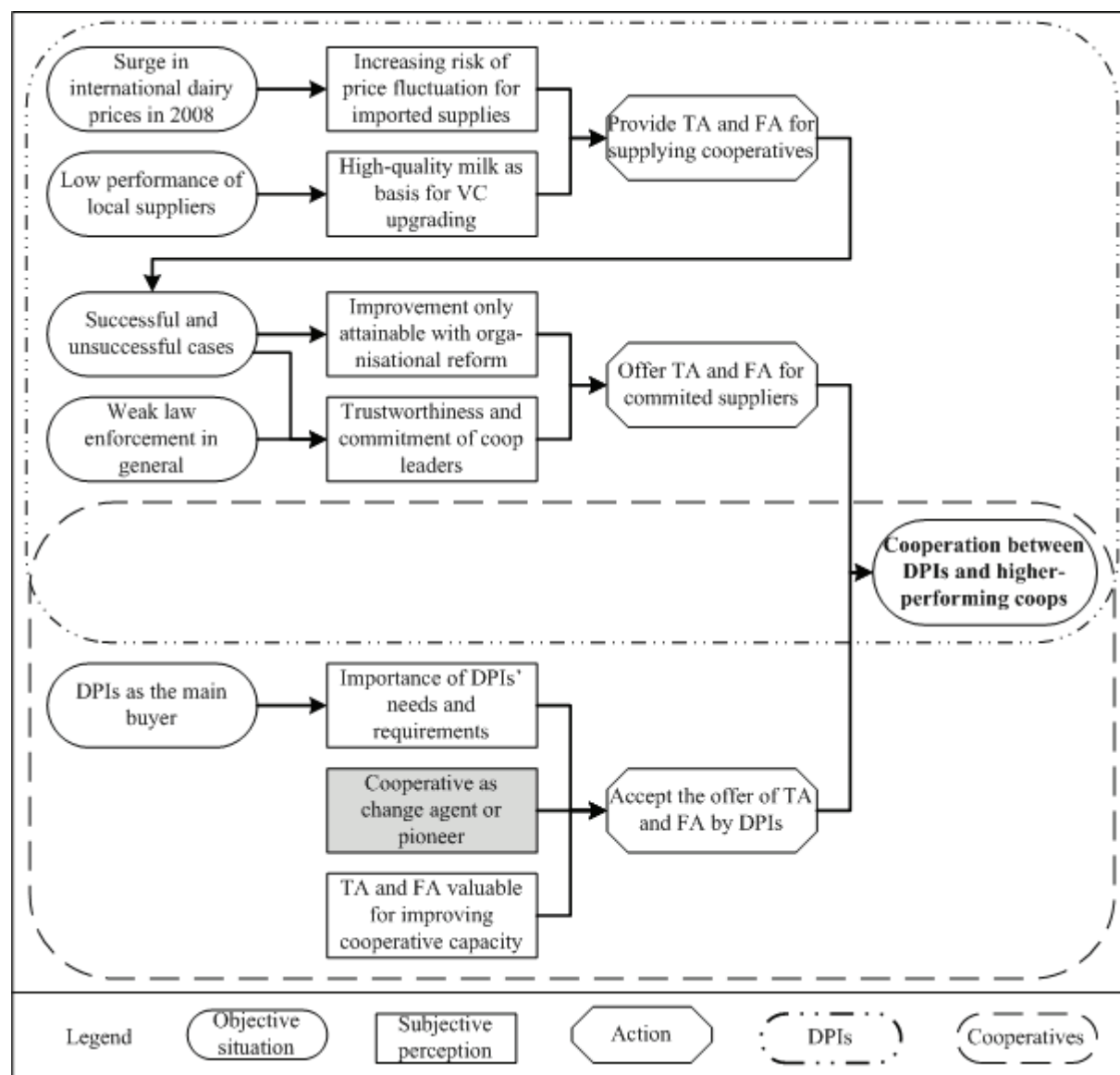


Figure 9-2 End outcome: Cooperation between DPIs and higher-performing coops¹⁰

Source: own compilation

¹⁰ The subjective perception of ‘cooperative as change agent or pioneer’ is highlighted with gray background to indicate that this perception is also used in the explanation of other macro variables. See Sub-chapter 10.3.2.

Figure 9-2 illustrates how and why the cooperation between DPIs and higher-performing cooperatives came about – the macro variable to be explained. This end outcome is explained by the aggregation of the selected action by both VC-operators – the micro variables –, namely that DPIs offer TA and FA for committed suppliers and that cooperatives accept the offer of TA and FA by DPIs. These actions are grounded in the subjective perceptions of each party which, in turn, are caused by the objective situation of the interaction system. The following sub-chapters explain separately the micro variables DPIs (upper part) and cooperatives (lower part of Figure 9-2).

9.3.1 Micro variable: DPIs

There were two occurrences that increased DPIs' risk perception of imported supply of raw materials. First, the abolishment of *Busep* in 1998 has indeed resulted in the resurgence of raw material imports by DPIs to exploit their unused production capacity, but at that time Indonesian currency depreciated heavily against foreign currencies due to the economic crisis: From IDR 2,500 per USD in the pre-crisis condition in mid 1997, USD/IDR exchange rate had peaked at 17,500 IDR per USD in mid 1998 (Aswicahyono et al. 2009) and levelled off at 8,000 – 10,000 IDR range ever since. Such situation caused immense increase in import costs for raw material. Second, the unexpected spurt in international milk price in 2008 gave DPIs a serious warning signal that import prices are not resistant to fluctuations caused by international policy and market changes or adverse climatic condition¹¹. Considering these occurrences, DPIs perceived that they needed to hedge against risks of possible future price fluctuations by reducing reliance on imported supplies¹². This prompted DPIs to establish solid domestic supply base.

However, the performance of the local suppliers was low and stagnating¹³. DPIs, on the contrary, require that locally produced fresh milk meets certain quality standards in order to be eligible for substituting the imported supplies. Lower-quality milk is only eligible for producing SCM, but not for liquid milk or powdered milk (Meylinah 2008, p. 3; Meylinah 2007, p.

¹¹ See Sub-chapter 6.4 and 6.5 for the causes of price surge on the world market.

¹² Additionally, DPIs faced another, presumably less-pressing, issue of improving food safety that encouraged them to upgrade their local suppliers. Cf. Jöhr (2008).

¹³ See Sub-chapter 8.2 for the description of cooperatives' low performance.

5). Apart from quality issue, the continuity and reliability – i.e. being free from chemical or antibiotic contamination – of the supply are to be guaranteed. But more importantly, high-quality milk is the basis for increasing the competitiveness of the whole value chain, because lower-quality milk requires higher technical efforts and thus higher costs in the processing. A spokesperson of the association of DPIs stated:

High-quality milk produced by Indonesian dairy farmers is competitive raw material for products of dairy processing industries, not low-quality milk. (Stanton, Emms and Sia 2005, p. 22)

In similar vein, representatives from the DPIs stated:

The task of our department is [...] to ensure that the fresh milk supply from the dairy farmers is sustainable and meet our requirements. (DPI 3)

Our company concentrates on the production of powdered milk for babies and infants. Therefore, the quality of the raw material we need must be high and guaranteed. (DPI 2)

As a result, DPIs decided to give technical (TA) and financial assistance (FA) to the supplying cooperatives to upgrade their capability. With such decision, the quasi market relationship between cooperatives and DPIs that persisted until the late 1990s was transformed into a more hierarchical relationship¹⁴ where DPIs provided embedded service to their suppliers based on certain binding requirements. Nevertheless, the endeavour to upgrade suppliers did not result only in successful cases; the results of some cases have been discouraging. Reflecting on the lessons learnt drawn on their experiences in assisting their supplying cooperatives, DPIs then concluded that there are, at least, two conditions for a successful cooperation with the suppliers.

First, the partner cooperative must be led by leaders that are trustworthy and reliable. These leaders must show a strong willingness and commitment to progressively change the cooperative. Also, they must be orientated toward supporting their own cooperative members and not pursuing their own self-interest. DPIs' representative explained:

What we need is an honest and simple cooperative leader, someone who has a true interest in developing the cooperative and its members and not making himself richer. Many coop leaders are not so trustworthy. It is very difficult to cooperate with such people. I think it is very important to identify and work with committed but simple people who are willing to work toward development. (DPI 1)

¹⁴ Cf. Sub-chapter 2.7.2

Actually it is not that we do not want to help our supplying cooperatives. We are open to cooperation with them. The problem is whether our help will reach its intended goal and not be misused. Can you imagine, in a negotiation with a cooperative the director gave us a small note containing his account number and the amount he wants? We cannot play like that. We are always audited and our transaction records must be clean and clear. (DPI 2)

These statements indicate the prevalence of malfeasance behaviour among cooperative leaders¹⁵ who misused DPIs' supports. Being oriented toward self-interest, such cooperative leaders would seek and exploit any possible opportunity to bring benefits for themselves, thereby relegating the original goals of developing the cooperative and members to a minor agenda. Also, since such cooperative leaders have vested interests; they are not transparent and usually not willing to be subjected to scrutiny. Consequently, the monitoring of the upgrading progress through technical and financial assistances proved to be difficult.

Another aspect required from trustworthy leaders was their commitment to continuously and exclusively deliver the DPI in return for the assistances provided, because DPIs had to make sure that their assistance, or better said their investment, does give them proper return.

Besides, we also want a commitment that if they receive our supports they will commit to deliver us their milk. If not, that is a loss for our investment. (DPI 2)

We are ready to help our suppliers to meet our requirements. But they have to commit to supply us continuously. Otherwise it does not make any sense. (DPI 3)

The conviction that successful cooperation is only possible with clean leaders is also a result of the weak law enforcement in Indonesia. Law enforcement in Indonesia is generally perceived to be ineffective by the VC-operators. Although the protection of property rights is more or less predictable, larger companies – like DPIs – have traditionally little faith in resolving disputes through legal mechanism¹⁶. Using legal contractual arrangements to bind suppliers is not a viable option, because although the contract conditions and consequences of infraction of the agreed terms are stipulated in the legal contract, its enforcement is still not easy: Ex-post problem settlement should follow intransparent, complex procedures and thus is time-consuming, costly, and not always effective. Hence, in this context preventing or reduc-

¹⁵ See Sub-chapter 10.2.1.6 for the prevalence and acceptance of opportunistic behaviour.

¹⁶ See Aswicahyono et al. (2009) for more elaborate analysis of the contemporary economic policy in Indonesia and its enforcement.

ing the risk of malfeasance behaviour through cooperating exclusively with trustworthy and transparent cooperative leaders offers a better strategy.

The second requirement is that cooperative leaders must be willing to introduce reform into the organisation of the cooperative itself. One DPI stated:

Learning from previous experiences, we changed our approach. The support is not given directly to the dairy farmers, but to the cooperatives, because basically it is the responsibility of the cooperatives to organise and help their members to improve their dairy business. It is not ours. So, we constantly liaise with the cooperatives and provide them support if they need. (DPI 1)

The statement was made against following background: In the early 2000 the DPI launched a massive supplier upgrading programme with considerable budget amount. From around 12 coops supported, only 3-4 exhibited considerable success, 2 totally failed, while the others showed moderate outcomes. The programme objective was to sustainably increase the welfare of dairy farmers by improving their management skill, in particular in hygiene aspect. As such, the programme was delivered directly to the dairy farmers. However, the programme was not considered to be successful, since the progressive changes were not sustainable: The technical know-how given was only practiced by the dairy farmers when supervised and given incentive. As soon as the programme ended and thus the supervision and incentive stopped, they returned to their former practices, because the programme did not create a sustainable structure. With the new strategy the DPI aimed at building the structure of the system where the cooperative leaders and dairy farmers embedded into: the broader institutional framework of their interaction system, including the organisational aspect of the cooperative. The effort to improve of dairy farmers' management skill was changed from temporary capacity building activities into a permanent training service provided by the cooperatives. Similarly, the provisional incentive-giving was institutionalised into a reward and punishment system¹⁷.

Another DPI also emphasised that their task in providing assistances focused on the empowerment of the cooperatives so that they were enabled to provide services for their own members. For example, the quality regulations delineated by the DPI were to be socialised by the cooperatives. The capacity building required to change dairy farmers' practices as well as the

¹⁷ See Sub-chapter 10.3 for further elaboration on the improvement of the institutional framework.

monitoring of the compliance was also to be performed by the cooperatives. Such approach reflects the strategy of empowering the institution of the cooperative.

Based on these perceptions, DPIs offered their TA and FA only to selected suppliers which satisfy their conditions. To access the supplier upgrading programme the cooperatives should follow the procedure as described by a DPI representative:

- The cooperative leader should express the commitment to supply the DPI continuously. Important is also the willingness to accept the quality regulations (quality/price mechanism and SOPs) defined by the DPI as well as the recommendations given by the DPI. This necessitates the readiness from the cooperative side to change the existing practices.
- The DPI then conducts field visit examining the conditions and practices at dairy farms and MCCs. A gap assessment is made to analyse the discrepancy between the existing and desired practices and conditions as required in the quality regulations.
- From the results of the gap assessment the DPI derives technical recommendations on how to improve the existing practices and conditions in gradual steps toward the ideal ones. Since the improvement measures also entail investment in equipment and infrastructure, the DPI provides several loan alternatives.
- After discussing and negotiating the loan alternatives the cooperative leader can decide on the most suitable alternative with the specification of the credit volume, interest rate, and tenor. The repayment is made through deduction from the milk sale to the DPI.

The technical assistance (TA) provided by DPIs covers aspects required for building the capacity of the cooperatives to meet the quality regulations. Technical guidelines specifying step-by-step improvement measures are given to the suppliers. For TA purposes DPIs assign field officers that regularly visit supplying cooperatives, discuss the progress of improvement measures, provide technical inputs and collect feedbacks for the DPIs. Through this embedded service the flow of technical information – including the introduction of new technology and innovation such as improved variety of fodder grass, silage production, and applicable milk test methods – from DPIs to cooperatives was significantly improved. Capacity building is also provided for extension workers and cooperative staff working at the MCCs. A comprehensive quality audit on product and process parameters is conducted every 6 months.

The financial assistance (FA) aims at the upgrading of inappropriate equipment and infrastructure. The delivery mechanism of FA is different among DPIs: While some DPIs use the service of commercial bank and provide guarantee for the loan procedure, others use their

own fund and provide the loan directly to the cooperatives. For the case that the loan was provided directly by the DPI (2006), no interest rate was applied for the purchase of equipment dealing directly with milk quality, such as cooling machine and food-grade piping system. As Indonesia is not a typical milk-producing country and thus the dairy technology is underdeveloped, the DPI also helped with the sourcing and import of such equipment, usually second-hand equipment from typical milk-producing countries. For the improvement of infrastructure, such as renovating or building new MCCs, the DPI charged an interest rate of 6% which was half of the interest rate for commercial loans at that time.

9.3.2 Micro variable: Higher-performing cooperatives

Leaders of higher-performing cooperatives are aware that DPIs are and will be their main buyer, because the demand for fresh milk on local markets has been too low. Also, in the long run DPIs have the capacity to absorb additional milk produced by the dairy farmers, provided that DPIs are willing to substitute imported supplies for locally produced milk¹⁸. Therefore, for cooperative leaders it is important to understand and satisfy the requirements posed by DPI, in particular milk quality, to establish a sustainable business linkage with DPIs.

To comply with DPIs' requirements cooperative leaders needed to build the capacity of the cooperative to provide collective services required for the attainment of high-quality milk production – cooperative as the change agent or pioneer. The reform of the cooperative was perceived as the first and highest priority in the endeavour to expand the dairy business. Such endeavour, however, was in fact a daunting task since it required a wide range of resources. Cooperatives needed technical advice on how to gradually achieve the quality standards and what improvement measures to take. They needed capacity building for the extension workers who will disseminate GDFP, train dairy farmers, and monitor their practices as well as for the cooperative staff working at the MCCs. Specific dairy technology is an important issue in the installation of cooling plants and piping system. The establishment of own laboratory for milk tests also required equipment and specific know-how. Most importantly, the improvement of equipment and infrastructure also required considerable amount of financial resources.

¹⁸ See Figure 6-3 for the proportion of the imported to locally produced raw material for DPIs.

Against this background cooperative leaders perceived that the TA and FA offered by DPIs can provide significant support in, and thus is of great use to, the endeavour to build cooperative capacity to provide collective services. Cooperatives did not have to pay additional costs for the services delivered through the TA. As for the FA, cooperatives could access loans, particularly those managed and provided directly by the DPI, with much more favourable conditions than regular commercial loans: simpler procedure, presumably without guarantee, subsidised interest rate, and repayment through deduction from milk payment. In return, cooperatives had to accept the conditions that, first, they were subjected to strict monitoring and scrutiny; and, second, they were necessitated to continuously and exclusively sell the milk to the DPI they cooperated with. However, as the conditions did not stand in conflict with their perception and orientation¹⁹, the cooperative leaders willingly accepted the offer of TA and FA, thereby establishing an intensive cooperative with DPIs.

9.4 Lesser-performing interaction system

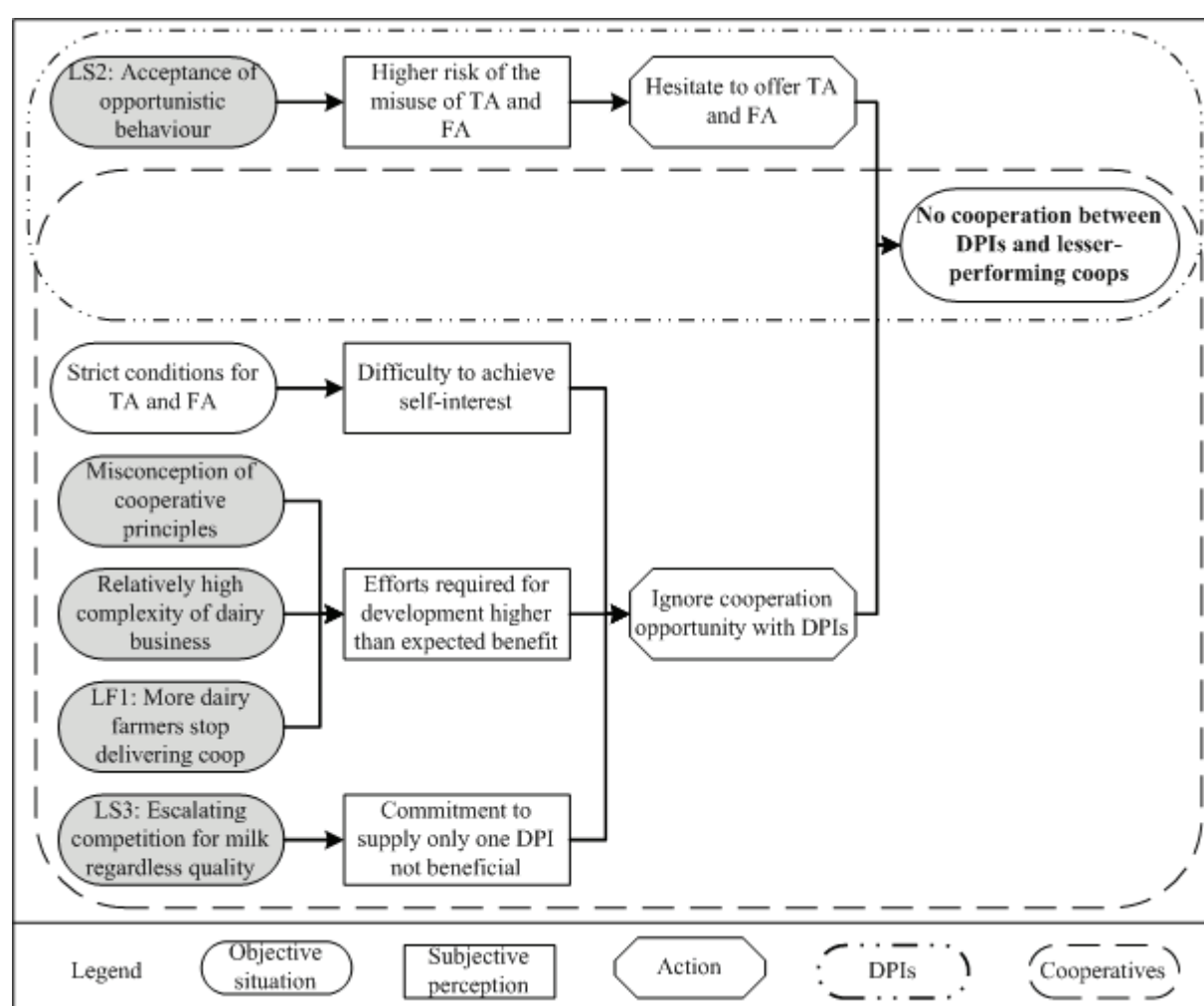
Due to the general acceptances and prevalence of opportunistic behaviour in lesser-performing interaction system²⁰ DPIs perceived higher risk of the misuse of TA and FA by the leaders of lesser-performing cooperatives. Therefore, DPIs hesitated to offer TA and FA to these cooperatives, thereby reducing the possibility of cooperation between both parties. On the other hand, the cooperative leaders decided to ignore the cooperation opportunity with DPIs based on their own perception of their situation. As a result, the cooperation between DPIs and lesser-performing cooperatives did not come about, although there were attempts to facilitate the establishment of intensive cooperation between DPIs and lesser-performing cooperatives.

The cooperative leaders also were not so enthusiastic to accept the strict conditions for TA and FA, namely being necessitated to provide transparent information and subjected into rigorous control by DPIs, because in such condition the pursuit of vested interests is more difficult. The reluctance of the leaders to engage in cooperation with DPIs was also indirectly

¹⁹ See Sub-chapter 10.3.2 for more detailed elaboration of the orientation and perception of the leaders from higher-performing cooperatives.

²⁰ See Sub-chapter 10.2.1.6 for the prevalence and acceptance of opportunistic behaviour in lesser-performing interaction system (LS2).

caused by the misconception of cooperative principles²¹: The main orientation of these leaders in cooperative management is to maximise surplus from diverse business units they have, including the dairy business. Compared to other business units, dairy business exhibits much higher complexity since it involves complicated quality regulations, procedures, and requires intensive resource allocation for its further development. Furthermore, as the business prospect of dairy business had been declining due to the increasing number of dairy farmers that stopped selling their milk to the coop²², the leaders perceived that the efforts required to develop dairy business outweighed the expected benefits. As a result, they did not make the efforts to approach and engage in cooperation with DPIs to expand their dairy business unit.



²¹ See Sub-chapter 10.2.2.3 and 10.2.1.2 for further elaboration on the misconception of cooperative principles.

²² See Sub-chapter 10.2.2.3 and 10.2.3.1 for further explanation on **LF1**.

Figure 9-3 End outcome: No cooperation between DPIs and lesser-performing coops²³

Source: own compilation

Another important factor is the specific situation during the “turbulence time”²⁴ where price competition among DPIs and milk intermediary traders were escalating. In this situation the commitment to supply – as prerequisite for TA and FA – was perceived as a negative condition by coop leaders. By supplying exclusively one DPI they lost the flexibility to shift to other buyers willing to pay higher milk price. Obviously, coop leaders considered the short-term benefit of the price margin to be more important than the mid- and long-term benefit of utilising the TA and FA to build the dairy business – this is consistent with their orientation as described above.

These arguments are underpinned by a peculiar phenomenon observed in the lesser-performing interaction system: The lesser-performing cooperatives are located near to a DPI. Theoretically, their proximity to the DPI provides a great comparative advantage of shorter delivery time from the production site to the processing plant. This can significantly restrain the bacterial growth²⁵ as the milk deterioration process can be shortened, even if the milk tankers are not equipped with cooling capacity. The distance to the respective DPI is around 2 driving-hours and this is much more efficient, also from cost perspective, than selling to other DPIs in other province which requires not less than 10 driving-hours. Thus, in mid-term perspective an intensive cooperation with the respective DPI can bring substantial benefits. However, the cooperation beyond buyer/seller relation did not come about. Even the DPI, for some time periods, chose to source fresh milk from other province due to quality concerns. A representative of the DPI commented:

Actually, we have approached and given them [leaders of lesser-performing cooperatives] advice on how to improve milk quality. But they are not interested in this. On the contrary, they frequently asked us whether we can provide them with loans. But as we are not a financial institution, we cannot do that. Of course, we can help to link them with banks. But the question is whether they have the commitment to improve milk quality and to become our supplier. (DPI 2)

²³ The objective situations are highlighted in grey to indicate that these are also used in the explanation of other macro variables. See Sub-chapter 10.2.

²⁴ See Sub-chapter 10.2.1.1 for further description of the “turbulence time“(LS3).

²⁵ See Table 10-2 for the significant influence of time on the geometrical bacterial growth.

The perception of the cooperative leaders is also strongly influenced by the situation of the community where they live, their role and responsibility in the cooperative as an organisation, and their relation with dairy farmer members. These aspects are dealt with in greater detail in Sub-chapter 10.2.

9.5 Concluding remarks

In the interaction system DPIs act as ‘rule setter’ and ‘rule enforcer’, whereas cooperatives ‘rule taker’. The role of DPIs, however, is not only limited to rule setting and monitoring, but also to enable suppliers to meet the requirements by providing TA and FA. Obviously, the setting and enforcing of rules alone is not enough to upgrade the value chain; DPIs have to specifically provide assistances to upgrade their supplier capacity.

For the cooperatives the TA and FA delivered provided significant supports in advancing their performance. In this respect, DPIs are the source for technical know-how, innovation, new technology, and, perhaps most importantly, financial supports with extremely favourable conditions.

The success of supplier upgrading programme depended on the quality of the cooperative leaders: Only transparent, accountable, reliable, and member-oriented leaders would and could utilise the assistances to build their cooperative capacity. This highlights the significance of strong commitment and trustworthiness of leaders against the background of the prevalence of opportunistic behaviour and weak law enforcement in general.

The lessons learnt drawn on DPIs’ experiences in supporting their suppliers also underline the necessity to follow a systemic approach of empowering the institutional capacity of the cooperatives. Rather than providing capacity building directly to the dairy farmers, DPIs supported the cooperatives to establish services required by the members. Only through this way the improvement measures can be delivered permanently and continuously – institutionalising the improvements.

10 Interaction System between Cooperatives and Dairy Farmers

Similar to Chapter 9 this chapter first describes the historical development of dairy farming and dairy cooperatives in Indonesia because the understanding of their emergence and change over time provides better insight into the institutional frameworks to be examined. The second and third sub-chapters provides extensive explanations on why no upgrading took place in the lesser-performing interaction system and on why it did occur in the higher-performing interaction system. The explanations are based on the analysis of the institutional aspects (regulative, normative, and cultural-cognitive) of the respective value chain governance. Then these macro variables are linked through Macro-Micro Model examining VC operators' perception and action embedded in the interaction system.

10.1 Retrospective view in analysing institutional condition

The history of dairy farming and dairy cooperative in Indonesia can be distinguished in five phases. These are described in more detail in the following sub-chapters:

- i. 1905 – 1945: Dairy farming under foreign estates
- ii. 1945 – 1960: Initiation and dissemination of smallholder dairy farming
- iii. 1960 – 1980: Establishment of dairy cooperatives
- iv. 1980 – 1996: Quantitative expansion of dairy farming
- v. 1996 – 2000: Temporary decline due to economic crisis

10.1.1 General history of dairy farming in Indonesia

Like other populations in South-East Asian (SE-Asian) countries Indonesian people are traditionally not typical consumer of fresh milk, be it from cows, buffaloes, goats, or horses. Rather, they consume 'milk' from coconut. According Sulastris et al. (2002, p. 19), it was the Dutch who had introduced dairy farming to Indonesia in around the late 19th century or 1905 (see Figure 10-1). Dairy farm estates were established in mountainous regions first in Central Java (Boyolali, Salatiga, and Ambarawa) and then expanded to West Java (Bandung area near to Jakarta) and East Java (Nongkojajar, Malang, and Batu). These large dairy farms with 100 to 300 milking cows were owned by the Dutch and designated exclusively to fulfil their own need for fresh milk and milk products. According to Ajron A. (2008), milk production in Bandung region, West Java had been well developed at that time:

In 1938 there were 22 dairy farms producing approximately 13,000 litre milk daily. All of the milk produced was collected by *Bandoengsche Melk Centrale* for processing (pasteurisation) before selling it to consumers in Bandung or outside. [...] Apart from producing fresh milk and dairy products like ice cream and chocolate milk, BMC also processed milk into butter, cheese, and cream for cosmetics. (Ajron A. 2008; translation by author)

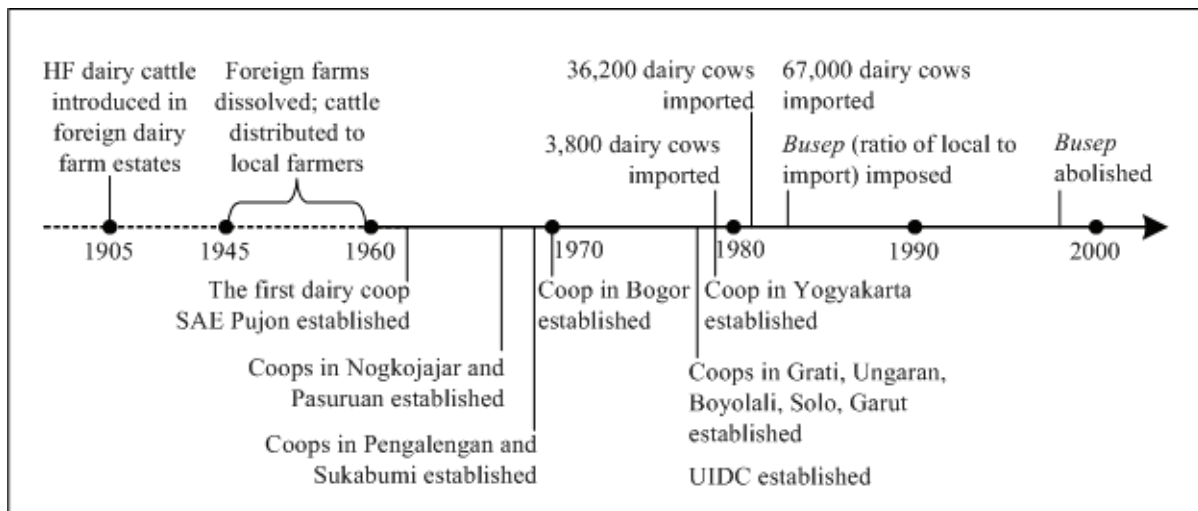


Figure 10-1 Timeline: Historical development dairy farming and cooperatives¹

Source: own compilation based on Sulastri et al. (2002, pp. 34–35)

Although dairy farming was relatively well-known in West Java, the habit of consuming fresh milk had not been adopted by indigenous people. Due to the fact that milk was consumed exclusively by Dutch people, consuming fresh milk was negatively associated with the ‘imperialist or coloniser’. Even if few people did consume milk, milk powder was more favourable than fresh milk. In 1920 the Dutch government in Indonesia imposed the so-called *Melk-Codex* that regulated the technical standard of fresh milk suitable for consumption. One of the main requirements was that edible fresh milk without further processing should contain less than 1 million bacteria contamination per ml. However, since in general the quality of the milk produced did not reach this standard, fresh milk was then processed into milk powder and consumed with warm water.

Only after Indonesian independence in 1945 the local farmers began to keep Holstein Friesian dairy cows, when these dairy farm estates were dissolved and the dairy cattle distributed to

¹ Regarding the number of imported cattle, the figures provided by Sulastri et al. (2002, pp. 34–35) are consistent with those by Moran (2007, p. 6) and YUSDJA (2005, p. 259), yet not with GKSI Jawa Timur (2008).

surrounding smallholder farmers. However, their intention keeping cattle was primarily to produce manure for fertilising their crop by utilising harvest residues and by-products of vegetable production as animal feed.

Afterwards, the expansion of dairy farming in Indonesia was mainly government driven. GoI imported dairy cattle in 1960s – 1970s to stimulate the local economy. During the 1st and 2nd Five-Year Development Plan of GoI (1969-1979) (*Rencana Pembangunan Lima Tahun – Repelita*) artificial insemination and feed improvement programme was introduced to enhance milk production (Sulastri et al. 2002, p. 20). However, in spite of these efforts the development of the dairy sub-sector had not yet taken off, as Moran (2007, p. 5) noted that by the late of 1970s there were only 3,000 milking cows on less than 1,000 farms².

The real surge was during the 1980s when GoI had been supporting large import projects of around 110 thousand dairy cattle from Australia and New Zealand. Along with these imports, new policies were enacted to boost the expansion of dairy farming: *Busep*³ (regulation on the ratio of imported and locally sourced milk which was used to force DPIs to source locally produced milk); subsidised credit schemes for purchasing equipment; establishment of artificial insemination centre in Lembang, West Java and in Singosari, East Java; disease investigation centre in Yogyakarta; and dairy training centre in Batu, East Java and Baturaden, Central Java. Again, despite the massive investments using public funds, the development target stipulated in the 3rd and 4th Five-Year Development Plan, namely to achieve 50% self-sufficiency rate (to satisfy 50% of domestic milk demand through locally produced milk), was not accomplished.

During the 1990s dairy farming in Indonesia continued to expand yet experienced a decline in 1997, as the financial and economic crisis severely struck Indonesian economy. Following FAO (2009b), the population of dairy cattle sank sharply from 348 in 1996 to 322 thousand

² Moran (2007, p. 5)'s estimation of the size of dairy population is consistent with Yusdja (2005, p. 259)'s figure, but not with Sulastri et al. (2002, p. 19) that noted "By 1978 there were 11 dairy cooperatives throughout Indonesia with estimated around 2,800 cooperative members keeping 48,600 dairy cows".

³ See Sub-chapter 7.7 on *Busep*.

heads in 1998⁴, particularly in West Java⁵, and then recovered slowly over time, reaching in 2001 the pre-crisis condition. The causes of this decline were, inter alia, the soaring prices of basic consumer goods that forced smallholder dairy farmers to sell their stock to temporarily bridge the fulfilment of their daily needs.

10.1.2 General history of dairy cooperative in Indonesia

The first dairy cooperative⁶ in Indonesia was the cooperative SAE (*Sinau Andadani Ekonomi*) Pujon, in Malang, East Java established in 1962. Until the end of 1970s, other dairy cooperatives were founded particularly in places where the local farmers have already kept dairy cattle (see Figure 10-1). Nevertheless, during the time period from 1960s to 1970s, dairy cooperatives were experiencing many challenges. Selling milk to the dairy industry was a daunting task, since they had to compete with the uncontrolled importation of cheap milk powder. Another challenge of competition was brought by the middlemen who buys directly from the dairy farmers and might have offered more attractive payment than the cooperatives. Hence, cooperatives became less active and some ceased the operation.

Despite the fact that the formation of cooperatives was intended, ideally, to provide services related to dairy activities – such as milk collection, delivery, loan, extension and training – to the members; Sulastri et al. (2002) made an insightful remark on the underlying reason of the establishment of dairy cooperatives, in particular the first dairy cooperative SAE Pujon, namely to curb the prevalence of opportunistic behaviour among dairy farmers:

⁴ FAO's figures differ from those of Yusdja (2005, p. 259) that introduced a differentiation between the number of dairy cattle owned by cooperative members and non-cooperative (private company). Yusdja's figures show a diverging pattern: while the population of dairy cattle owned by cooperative member experienced a sharp decline, that of non-cooperative exhibited a steep increase. Interestingly the degree of decline and increase were approximately the same, thereby indicating a transfer of ownership from cooperative members to non-cooperative. Unfortunately, Yusdja (2005) failed to mention the data source for further clarification.

⁵ Cf. Stanton, Emms and Sia (2005, p. 16)

⁶ Actually, already in 1949 a group of farmers in Pengalengan, Bandung, West Java formed a “cooperative” called Gappsip (*Gabungan Petani Peternak Sapi Indonesia Pengalengan*) or literally translated Union of Farmers Rearing Dairy Cattle in Pengalengan. This “cooperative” was then dissolved in 1961 (Masdien.2009) or 1963 (Baga 2004, p. 277).

Purposes of cooperative establishment were to eliminate the problems of unfair competition among the dairy farmers in pricing of milk, bad quality of cows, low milk production and low quality of milk. Before the dairy cooperative was established in 1962, the farmers were competing with each other by decreasing the milk price but mixing the milk with the water in order to get more profit. (Sulastri et al. 2002, p. 19).

In 1978 dairy cooperatives from different provinces established Board for Coordination of Indonesian Dairy Cooperatives (*Badan Koordinasi Koperasi Susu Indonesia – BKKSI*) that later on evolved into Union of Indonesian Dairy Cooperatives or UIDC (*Gabungan Koperasi Susu Indonesia – GKSI*) in 1979⁷. This organisation was formed with the main purposes (Sulastri et al. 2002, p. 20):

- to give guidelines to dairy cooperatives on how to provide different services to dairy farmers (dairy cow supply, fresh milk marketing, technical support, feedstuff production, basic veterinary services, milk equipment, milk tankers, milk processing and training) and to upgrade the services rendered;
- to strengthen both cooperative personnel and system;
- to provide loans in the form of equipment like cooling machines, milk cans, tankers, and motorcycles;
- to give advise to GoI on policy making in the dairy sub-sector (such as in the case of *Busep*);
- to negotiate with the DPIs regularly about the pricing arrangements based on the milk quality; and
- to facilitate the importation of dairy cattle for dairy cooperatives and farmers.

However, the performance of services rendered by UIDC was considered to be inferior and insufficient by the interviewed cooperative leaders, particularly when compared to the service costs demanded by UIDC. To cover the service costs UIDC deducts a certain amount from the milk payment by DPIs to cooperatives⁸. Particularly in Central Java the issue of transparency

⁷ Cf. Baga (2004, pp. 78–79)

⁸ Cf. Nugraha (2007: 45)

and accountability in managing the funds⁹ contributed by cooperative members has been in the limelight of dairy VC stakeholders' attention.

During the 1980s dairy cooperatives were involved intensively in various government support programs. On the one hand, dairy cooperatives acted as the beneficiary of such programs, as in the case of grants e.g. for cooling or pasteurisation machine. On the other hand, and perhaps most importantly, coops had been systematically directed towards playing the role as 'intermediary institution' in the 'cooperative model' introduced in 1983 (see Figure 10-2):

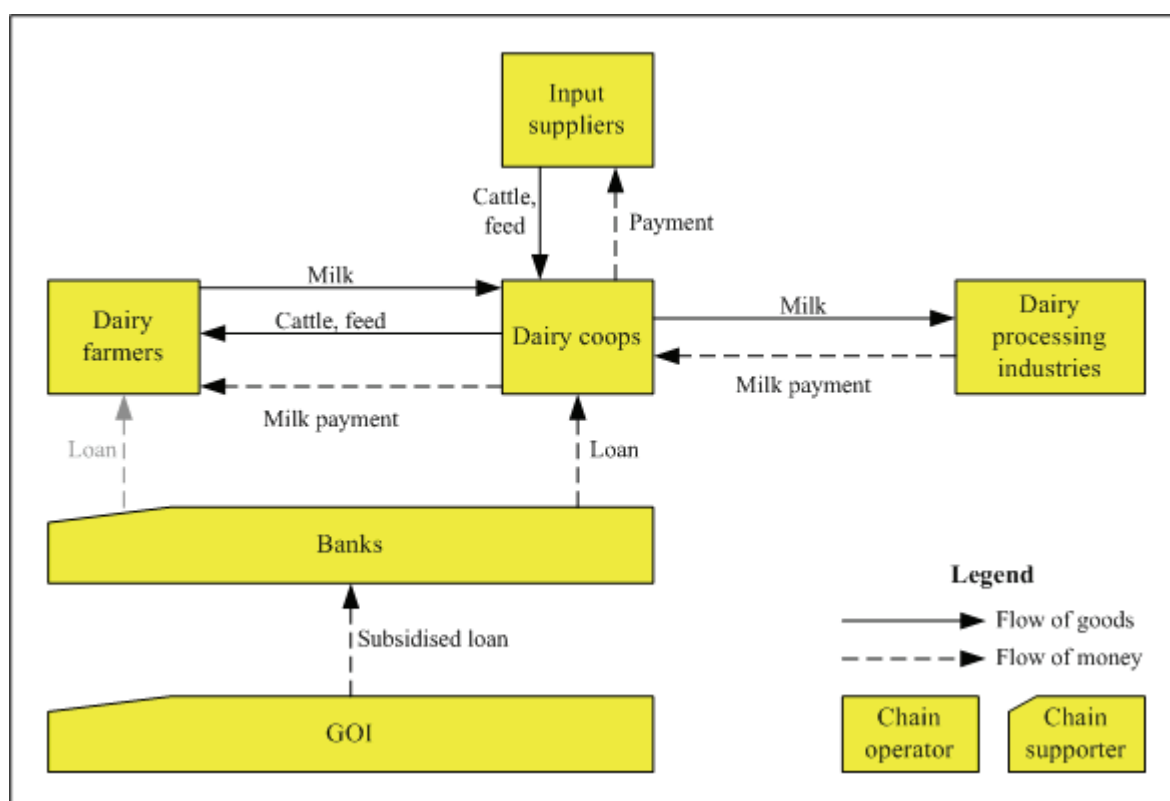


Figure 10-2 The cooperative model introduced in 1983: Cooperative as intermediary institution

Source: own compilation¹⁰

As depicted in Figure 10-2, dairy cooperatives played a significant and strategic role within government support programmes. Apart from managing the collection of milk delivered by

⁹ The issues of transparency and accountability are closely related to the prevalence of opportunistic behaviour. See Sub-chapter 10.2.1.6.

¹⁰ Cf. Kartadihardja (1988) in Sulastri et al. (2002, p. 20)

dairy farmers and its delivery to DPIs, dairy coops organised the collective buying of dairy cattle and concentrate feed and their distribution to the dairy famers (see the 'flow of goods'). The costs incurred for these services were covered through the deductions from the milk payment to the dairy farmers.

Predominantly, dairy coops were the only gateway for any flow of money towards the dairy farmers (see the 'flow of money'). Subsidised loans by GoI were disbursed through mainly state-owned banks which in turn disbursed these either via UIDC or directly to the cooperatives. The cooperatives managed such loans either in 'executing' or 'channelling' model: In the first model the coops as the loan recipient received the fund, managed it by themselves, set the interest rate, and assumed the risk of any loan default; whereas in the latter the coops acted as a 'broker' supporting the bank in organising the loan, mediating the dairy farmers as the loan recipient, received some fees, but did not assume the risk of any loan default. The loans were not given to the dairy farmers as cash fund, but as dairy cattle purchased by the cooperative. There were, however, cases where the banks directly disbursed the loans to the dairy farmers or farmers groups (depicted by the arrow with broken line in grey colour). In such cases, the role of cooperative was limited only in giving recommendations for the dairy farmers or farmers groups to get the loan directly from the bank.

Sulastri et al. (2002, p. 21) argued that thanks to the effective implementation of this cooperative model, dairy farming took root and started to take-off in Indonesia during the 1980s. This is indeed true, yet in the sense of quantitative dimension: The number of dairy farms and cattle rapidly increased and the domestic milk production grew significantly (see Figure 5-2). Nonetheless, in other dimensions, such as qualitative and organisational improvement, dairy co-operatives and dairy farmers had not yet achieved significant development. On-farm practices were and are generally still inefficient, hygiene problems raged on, and even many dairy cooperatives were involved with high incidence of bad debts¹¹.

10.2 Lesser-performing interaction system

In the lesser-performing interaction systems, value chain upgrading has not taken place. It does not mean, however, that there were no attempts to initiate improvements and introduce

¹¹ Riethmuller et al. (1999b, p. 19); also in Stanton, Emms and Sia (2005); Moran (2007); and many others

changes. But rather, the actors or individuals in such systems chose to maintain the existing condition.

10.2.1 Macro variable: Institutional framework

10.2.1.1 Regulatory aspect: Regulations for product and process quality

The interaction system between cooperative and dairy farmers entails VC-specific regulations concerning product and process quality which are relatively complex. The product quality is determined through several basic tests – in contrast to the more sophisticated tests at the DPI – at the milk collection centres (MCCs) that require simple tools and can be performed without any laboratory equipment. The basic test parameters and methods are shown in Table 10-1. Such simple tests also serve as rejection criteria: should a milk consignment fail one of the tests, it will be rejected by the cooperative. With regard to process quality there is hardly any regulation, despite the fact that processes in dairy farming utterly influential in determining the milk quality¹².

Table 10-1 Basic tests of product quality performed at the MCC

Parameter	Description	Test method
Physical properties	Trained MCC staff taste, smell, and visually assess the milk consignment for any abnormality	Sensory / organoleptic test
Milk acidity	The milk is mixed with an equal volume of 68% ethanol; abnormal milk forms floccules indicating high level of acid as a result of microbial activities.	Alcohol test
Milk density or specific gravity	The milk density is measured and values below a certain threshold signify adulteration with water. The test also includes temperature measurement to guarantee the comparability of the test results.	Lactodensimeter and thermometer

Source: own compilation

The weak or absent regulation for product and process quality (**LC2**) impedes the transmission of the technical information pertaining the quality standards and product requirements delineated by the DPIs backwards along the chain, i.e. toward cooperative staff and dairy farmers. As a result, the coordination along the chain is more difficult since the VC-operators are not aware of and able to comply with the technical requirements.

¹² On the contrary, process-quality regulation exists in higher performing cooperatives. See Sub-chapter 10.3.1.1.

Lesser-performing interaction system in general does not have quality/price mechanism in place (LC3). All dairy farmers in a cooperative receive the same milk price regardless the milk quality they delivered. Some cooperatives have already applied milk price differentiation for larger groups of one or several MCCs with hundreds of dairy farmers.

The basis for price differentiation is, however, not the result of quality tests but instead the “loyalty” of dairy farmers (LC1): The cooperatives give price incentives to dairy farmers who continuously deliver their milk to the cooperatives. Such price differentiation became highly relevant during the “turbulence time” in 2007 – 2008, namely when the competition among DPIs, particularly through milk intermediary traders, for securing domestic raw milk supply escalated (LS3) as the milk prices in the international market soared¹³. In such circumstances, getting higher quantity of milk was much more important than getting higher quality. Also, the most significant quality parameter has also shifted: when previously bacterial contamination was in the limelight of quality improvement measures, total solid (TS) suddenly became the sole quality determinant as it is the main ingredient needed for the manufacturing of dairy products.

10.2.1.2 Regulative aspect: Organisational format of the dairy cooperative

There are two different organisational format of cooperatives¹⁴ engaged in the dairy value chain: first, Village Unit Cooperative (VUC) translated from *Koperasi Unit Desa (KUD)* as multi-purpose cooperative at village or sub-district level; and specialised dairy cooperative as single-purpose cooperative specialising on the dairy business as the core business. All of the cooperatives observed (4) in the lesser-performing interaction system has the VUC organisational format; whereas those in the higher-performing interaction system specialised dairy cooperative. Besides the dairy business unit, VUC generally runs other business units such as loan service for various purposes, public transportation service (minibuses), payment of electricity bills, retail shop selling daily consumer goods, and so on. As it will be later on ex-

¹³ Cf. Sub-chapter 6.4

¹⁴ Throughout this work, the term ‘dairy cooperative’ refers generally to cooperative engaged in the dairy value chain. For the sake of clear distinction between the two organisational formats of cooperative, this sub-chapter employs the term ‘KUD’ and ‘specialised dairy cooperative’.

plained, the multi-purposesiveness of VUC is premised on an erroneous understanding about the essence, role, and function of cooperative itself.

But before delving into a more elaborate analysis about the organisational format of VUC, it is necessary to review shortly the historical development of cooperative movement in Indonesia, as it will cast some light on the current, ambiguous state of cooperatives, in particular VUC. Following Masngudi (1990), the first cooperative in Indonesia was established in the late 19th century during Dutch colonisation. Afterwards, other cooperatives followed and then the cooperative movement developed further and evolved through several historical phases (see Figure 10-3).

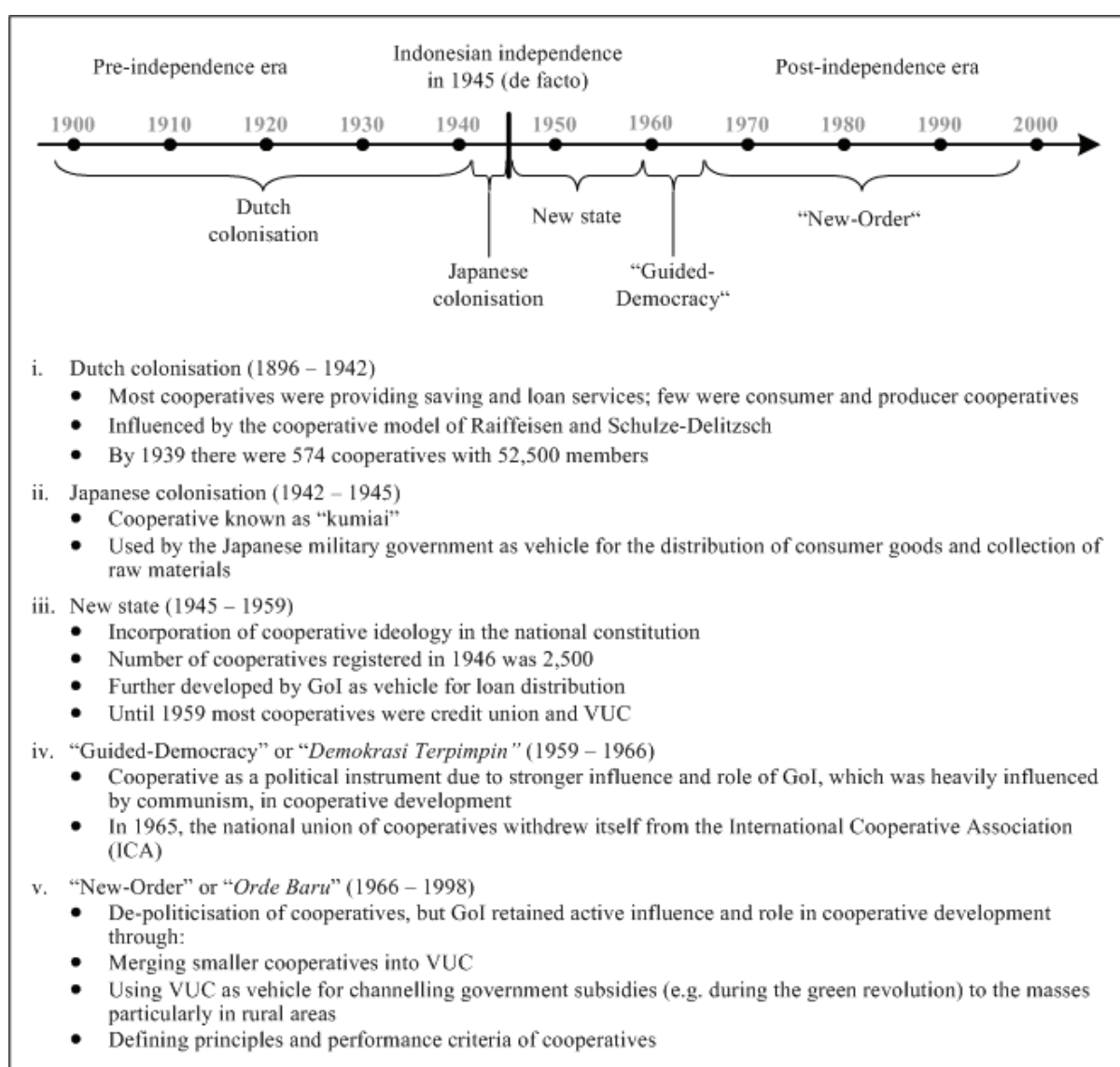


Figure 10-3 Historical development of cooperative movement in Indonesia

Source: adapted from Masngudi (1990)

From the historical development – particularly the latest development under the New Order regime – and the observations and interviews conducted, it can be concluded that the current organisational format of VUC has contradictory principles in itself¹⁵. The contradictions between the actual principles vs. the ideal principles¹⁶ – which are explained further in the following sub-chapters – are listed as follows:

- i. Top-down vs. bottom-up establishment
- ii. Surplus maximisation vs. cost reduction
- iii. Government- vs. member-defined programme
- iv. Dependent vs. self-help and self-reliant organisation
- v. Accountability to government vs. to members

The contradictory principles discovered in the organisational format of VUC is a complex problem that results from, inter alia, its history of development with dominant government interventions. While in general the society has comprehended that cooperative should have a unique characteristic, in practice it closely resembles either a capitalistic enterprise or a dependent social organisation. A cooperative expert in Indonesia stated that the general understanding of basic principles of cooperative is limited only to abstract ideological understanding. Despite the fact that cooperative is frequently associated with jargons like ‘collective business’, ‘democratic’, ‘reciprocity’, ‘equality’, ‘cooperation’, etc; there is virtually any concrete application of such ideals in the management of the cooperative. He concluded:

There is a big discrepancy between the concept and practice of cooperative in Indonesia, resulting in an ambiguous existence of cooperative. The main cause is the inability to translate basic concepts of cooperative into an operational framework which can be applied in the practical world. (Exp 5)

10.2.1.3 Normative aspect: Social norm of *pakewuh*

One of the most remarkable norms influencing the whole system is the social norm of ‘*ewuh pakewuh*’ or ‘*pakewuh*’ in Javanese or ‘*sungkan*’ in Indonesian (LS1). There is no literal translation of this word in English, yet it can be conceptualised as a reluctance to take any

¹⁵ Cf. Suradisastra (11-15 September 2006)

¹⁶ The basic identity, values, and principles of cooperative can be found in International Co-operative Alliance (2007).

action or say something because it can insult the feeling of others or lead to conflict or hurt the relationship among individuals. This norm is built on the social value of ‘preserving harmonious relationships’ (*rukun*)¹⁷ and associated with other norms like ‘politeness’ (*santun*), ‘empathy’ (*tenggang rasa*), ‘avoiding conflict’ or ‘compliant’ (*ngalah*), as well as the Indonesian-typical cooperative principle of ‘familialness’ (see Sub-chapter 10.2.1.2). Hence, the meaning of this term can be described as the opposite meaning of the term ‘assertive’ that means ‘describes someone who behaves confidently and is not frightened to say what they want or believe’ (Walter 2008).

Pakewuh does not apply only to the interaction of individuals in the same social group / status, but also to those from higher to lower social group / status and vice versa. While such social value is prevalent throughout Indonesia, the intensity or degree of reluctance is different in every region or ethnic group. In the dairy production centre in West Java the dominant ethnic group is Sundanese, in Central Java Javanese, and in East Java both Javanese and Madurese. Among these ethnic groups the adherence to *pakewuh* is the strongest in Javanese culture in Central Java, as it is indicated by frequent referring during interviews and observations.

However, a question may arise: why is the adherence to *pakewuh* among the Javanese ethnic group in Central Java is more intensive than among the Javanese in East Java or other ethnic groups? There are several possible explanations for this difference. First, the observed region in Central Java is more intensively influenced by the ‘court culture’ that set great store by the Javanese cultural values and norms than in any other region. This is on account of the geographical proximity to Yogyakarta and to Surakarta¹⁸, i.e. the centres of Javanese court culture and thus the “barometer” (*pakem*) of Javanese culture. In fact, the observed dairy value chain in Central Java was historically under the authority of the Sultanate of Surakarta during Dutch imperialism. It is generally said that the Javanese culture of the regions surrounding

¹⁷ Cf. Zeitlin (1995, pp. 95–141) for similar description of Javanese culture

¹⁸ Yogyakarta is the only province in Indonesia still governed by the pre-colonial monarchy, i.e. the Sultanate of Ngayogyakarta Hadiningrat. Surakarta was governed by the Sultanate of Surakarta Hadiningrat. While at present the royal families and the court still exist, they no longer hold any political power. Both Sultanates were descendants from the Kingdom of Mataram.

Yogyakarta and Surakarta is ‘finer’ or ‘more delicate’, including the Javanese language as well as the social values and norms guiding the behaviour of individuals in the society.

Second, the development of the normative system – under which *pakewuh* is subsumed – in Central Java has a different historical background from that in East Java. The Javanese culture in Yogyakarta and Surakarta historically originated from the Kingdom of Mataram, while the Javanese culture in East Java from the Kingdom of Majapahit and its successors. Mataram was predominantly characterised by an agrarian economy with large cities in inland areas along the river, whereas Majapahit based its economy predominantly on commercial trades in its large ports on the northern coastal areas of Java. As a result, Majapahit was relatively more exposed to external influences, more open toward foreign cultures, and had higher tendency for culture mixing. The openness of Javanese culture in East Java is frequently associated with its character tendency toward being more straightforward in expressing opinions or more assertive (*‘blak-blakan’*). In contrast, the agrarian communities in Mataram were built upon a normative system of mutual help or cooperation (*‘gotong royong’*) and collectiveness (*‘sambatan’*), for example, during the labour-intensive activities of trans-plantation and harvest in the irrigated rice farming system. Such system necessitates harmonious, conflict-free relations of individuals to function – situations where *pakewuh* play a significant role. Furthermore, in order to sustain the functioning social structure and thus livelihood, agrarian societies were dependent on the preservation of such social values over generations – it explains why the internalisation of *pakewuh* in individual behaviour is more intensive in Central Java.

Third, the normative system was historically a fundamental strategy for survival. There is an interesting fact that the Sultanate of Yogyakarta and Surakarta were the only ones in Indonesia that had succeeded to co-exist along with Dutch imperialism. While other kingdoms or sultanates were destroyed or dismantled during Dutch imperialism, both sultanates were able to retain their monarch structure and rule. The strategy for the co-existence was to behave cooperatively and to pose no threats to the hegemony of Dutch rule. This was primarily done in two ways. First, instead of establishing a solid military power which could potentially pose a threat to the Dutch, the efforts had been concentrated on developing arts and culture – this also explains why the courts have achieved higher status of art and culture development. Second, to avoid conflict with Dutch colonist the leaders of both sultanates had to cultivate social values and norms that guide individuals to behave accordingly. Of course, such normative system should apply not only to the court families, but also to the larger communities. The

widespread and successful internalisation as well as the maintenance of the normative system, again, over generations was indeed the key to survive under the given circumstances.

10.2.1.4 Cultural-cognitive aspect: Dairy farmer as a profession

In Indonesian context, dairy farming is not a traditional profession. Also, regular consumption of fresh milk is not a traditional habit. Dairy farming was primarily introduced by large Dutch dairy farms in the late of 19th century¹⁹. Initially, keeping dairy cattle was primarily intended to produce manure for fertilising crops through utilising harvest residues and by-products of vegetable farming; whereas the milk was regarded as additional income from keeping cattle. Keeping dairy cattle was used for filling the time gap between labour-intensive harvest times (every 3 – 4 months). As such, dairy farming was considered as sideline job.

There is an indication that the dairy farmers identify themselves more as ‘crop farmer’ rather than ‘livestock keeper’. The term ‘farmer’ in English is used to refer to both crop farming and livestock farming (e.g. dairy farmer). This is, however, not the case in Indonesian. The literal translation of ‘farmer’ is ‘*petani*’ which is associated mostly with ‘crop farmer’, whereas ‘livestock farmer’ has a specific terminology, i.e. ‘*peternak*’. Thus, the phenomena that dairy farmers are frequently referred to as *petani* – instead of *peternak* – may denote that crop farming is more probably the main source of livelihood.

There is no such profession like ‘dairy farmer’ (*‘peternak sapi perah’*). There is only farmer (*‘petani’*) doing a sideline job keeping dairy cattle. The profession ‘livestock keeper’ (*‘peternak’*) is not existent, because they are basically crop farmer producing maize, tobacco, or others. They do not name their own group ‘group of dairy farmers’ (*‘kelompok peternak’*), but instead ‘group of famers’ (*‘kelompok petani’*). (Coop 4, lesser performance)

The method of keeping dairy cattle is following the ‘common practices’ that developed from traditional practices in keeping indigenous cattle. The observance of common practice denotes the cognitive process of pattern recognising – as opposed to computational or calculative reasoning – since it involves finding a pattern or regularity through observing and comparing certain behaviour and the respective outcomes of such behaviour. However, since the ‘traditional practices’ concern mainly practices in rearing cows and buffaloes which are usually used for tilling land, transportation or as saving; such practices did not adequately consider

¹⁹ See Sub-chapter 10.1.1 for the history of dairy farming in Indonesia.

the specific requirements of dairy cattle and dairy farming, e.g. in hygiene aspect or feeding management.

Moreover, considering the fact that most dairy farmer and their household members also do not consume their own-produced fresh milk, there is an indication of the lack of understanding that milk – as an extremely perishable product designated for human consumption – requires appropriate treatment and that inappropriate treatment of milk may pose serious health risks for the consumers. Thus, it can be said that the awareness and practices of good dairy farming were absent from the outset.

Initially, dairy farmers in Boyolali were tobacco farmers. Frequently they address themselves as '*petani*' as opposed to '*peternak*'. They keep dairy cows with the purpose of getting manure for fertilising their tobacco plant and not to get milk. Consequently, they treated and managed their dairy cows as common indigenous cows without taking much care of specific things to be managed in dairy farming like hygiene or feeding management. To change their initial practice in dairy farming is therefore very difficult. (Coop 4, lesser performance)

Regarding the perception of the profession as dairy farmers there is a dichotomy identified. On the one hand, dairy farmer is associated with poverty, traditional or non-professional management, low productivity, dependency and neediness of supports, or dirty job (in literal meaning). On the other hand, it is associated with prosperity and prestige. As cattle are treated as saving in a traditional system, those individuals possessing many cattle are regarded as prosperous and enjoy higher socioeconomic status in comparison to other villagers. On further inquiry into this discrepancy, it can be concluded that, more or less, cattle ownership (lactating cow) of total 3 or lower is associated with the first; whereas 4 or more with the latter. Nonetheless, since the majority of the dairy farmers have a maximum of 4 cattle, it can be said that most of them are associated with poverty.

10.2.1.5 Cultural-cognitive aspect: Traditional economy

Farmers are a special category of VC operators, because mostly they are situated in a traditional system of subsistence economy, as opposed to other VC operators who are usually situated in a more (semi-) commercial system. Farmers in traditional system are

[...] subsistence people living and working in village communities who are not commercially oriented. They simply sell their excess of production to the local market and many rural as well as urban consumers rely on that kind of supply. So that is a non-commercial economy in a way. (Exp 4)

In traditional system, the first and foremost objective of agricultural production is to satisfy farmers' own household needs. Thus, agricultural production is in the first place not oriented

toward market demands, requirements, and opportunities. Moreover, non-commercial orientation of economic activity is frequently associated with the lack of entrepreneurship: the incapability of identifying the own potentials and resources, assessing the environment and utilising business opportunities, implementing innovations, and taking risks.

Nevertheless, non-commercial orientation is not only a problem of skill, but has rather a deeper underlying cause: the fundamental preference in economic pursuits by traditional farmers is not to continuously improve the business and achieve higher economic status, but to generate a 'sufficient', 'enough', and 'decent' livelihood for the household:

The most problematic thing [that hampers the business development of traditional farmers] is that usually traditional farmers feel content with what they already have, with the existing condition. So, they do not have the desire or expectation to improve their business further. The most important thing for them is to have enough food for the family, enough money for the education of the children and for the daily living; that's all. [...] Indeed, the local proverb "*mangan ra mangan sing penting ngumpul*" [which means "it does not matter whether the family can eat or not, the most important thing is that the family stays together"] exists vividly in the mind and actions of rural people, especially among traditional farmers. (Exp 6)

The economic strategy applied in traditional economy is not specialisation on and maximisation of a single source of income, but rather 'livelihood strategy' that aims at the minimisation of risks through combining different sources of income.

In most places you will find that farmers do not rely only on one product, not just milk. You have to find out what else makes up the livelihood of these people, because people optimise their livelihood, they do not optimise their milk production. If you are a commercial milk producer and you don't do anything else and milk is your main product, then you can apply your rationality to your milk production. But in most cases, particularly in poor rural areas, we are talking about livelihood. The strategy of the people is how I can survive, what my best livelihood strategy is. That includes other options: wage labour; if they are close to a tourist attraction they might do some tourist guide work; or something else like go fishing, whatever it is. (Exp 4)

Another particular characteristic of the traditional system is that economic concerns are inextricably intertwined with the own household and social concerns. Subsistence farmers do not separate financial resources for business and household needs. Consequently, farmers are frequently not aware – at least not in numbers – of the costs incurred in production (including the work hours of family labours), the cost structure, as well as the income generated from milk sale and the respective gross margin.

Traditional economy is an economy in which economic and social aspects are very much inter-related. So, especially in traditional farming you have that. What I am referring is not only to the value chain but also for individual households because traditional farmers sell their production, but then of course the whole production itself is closely interrelated with household concerns. There are different sources of income and they are not kept separate. So if I can earn a little bit being a wage labourer, that money will get into my farm production. Then, again I'm

using some of the profits from farming for other purposes. So, household and the business are not separate. The same also applies to social relations: I use my family as a source of credit; if I need services I go to my uncle. This means a close interlinking of social and economic concerns. That characterises a traditional economy. (Exp 4)

10.2.1.6 Cultural-cognitive aspect: Prevalence and acceptance of opportunistic behaviour

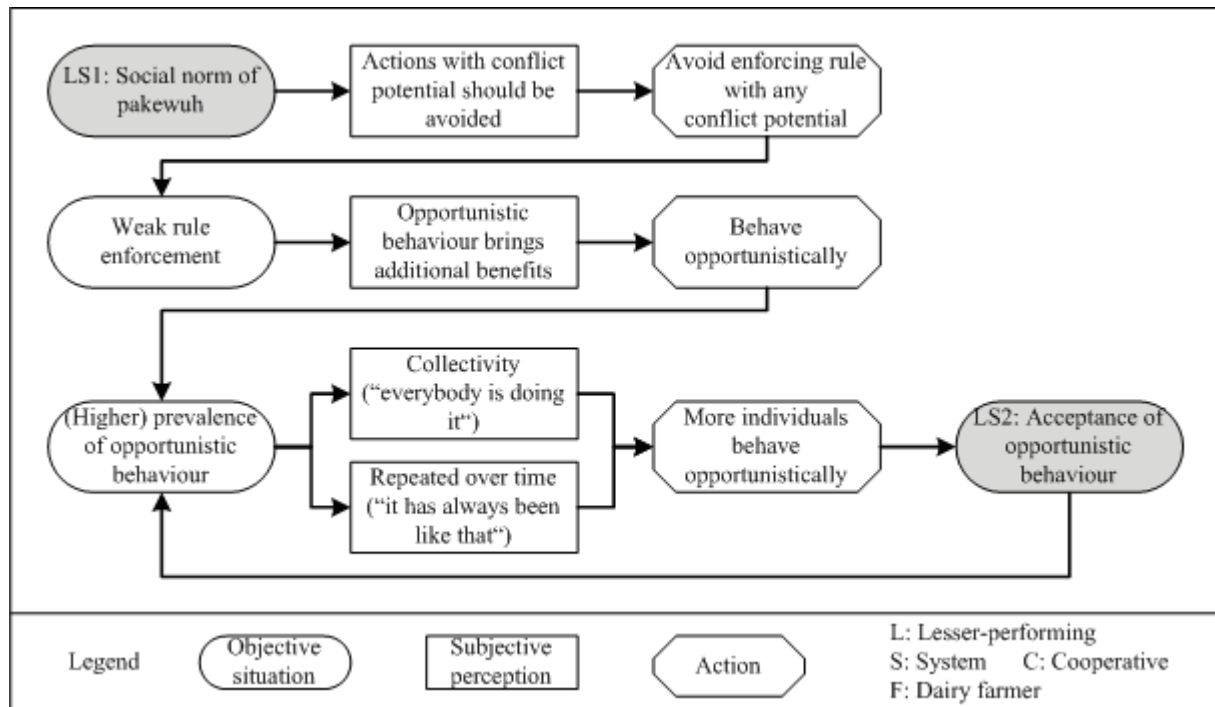


Figure 10-4 Macro variable: Prevalence and acceptance of opportunistic behaviour

Source: own compilation

Figure 10-4 explains, first, why the internalised social norm *pakewuh* paves the way for the prevalence of opportunistic behaviour²⁰; and, second, why opportunistic behaviour through recurrent and widespread practices becomes habitualised collective practice. The prevalence of the social value ‘preserving harmonious relationship’ through the observance of the social norm ‘*pakewuh*’ (LS1) exerts strong influence on the orientation and thus behaviour of individuals in the interaction system. For them, any action or expression that could insult the feel-

²⁰ The following explanation does not signify, however, that the social norm *pakewuh* is the one and only cause of weak rule enforcement, prevalence of opportunistic behaviour, and acceptance of opportunistic behaviour. Weak law enforcement is already a general problem in Indonesia. The social norm of *pakewuh* reinforces the already weak law enforcement.

ing of others or potentially lead to conflict should be avoided. The higher the degree of internalisation, the more is such action perceived as inconceivable. Hence, in general individuals tend to avoid rule enforcement if it is fraught with the potential of inflicting inter-personal conflicts, thereby making any rule enforcement difficult.

The fact that opportunistic behaviour does not face any serious consequences like punishment either by legal coercion or social pressure, combined with the perception that opportunistic behaviour offers additional benefits prompts individuals to opt for opportunistic actions. With increasing number of individuals doing so, opportunistic behaviour becomes prevalent. Now, when opportunistic behaviour is repeated over time by many individuals, it reinforces individuals' perception that opportunistic behaviour is indeed "justified". Opportunistic behaviour is amplified by the perception that, first, "everybody is doing it" meaning that there is a collective interest in it; and, second, "it has always been like that" meaning that it is not a serious problem since it can continue uncontrolled and uncurbed. Consequently, more individuals are convinced to take opportunistic actions. This leads to the acceptance and tolerance of opportunistic behaviour (LS2) by the society which in turn encourages, again, more individuals to behave opportunistically, thereby creating a vicious circle.

The practice and acceptance of opportunistic behaviour is not only a problem of one category of VC-operator but rather a systemic problem, including local government as supporting institution for the dairy VC. Some examples are described as follows.

Dairy farmers

In the areas where lesser-performing cooperatives are operating, opportunistic behaviour among dairy farmers is prevalent. The most common malpractice is adding water – not boiled water suitable for drinking, but "fresh" water drawn from the well or river – to increase the bulk volume of milk²¹. Such malpractice had even already been identified during the early days of cooperative establishment²². When asked about the prevalence of milk adulteration with water and the respective risk of being detected in the milk density test, a coop leader responded:

²¹ See Sub-chapter 10.2.3.2 for further explanation on milk adulteration practices.

Such practice is common here. It can be easily identified during milk delivery in the MCC. As we can see, many milk deliveries can reach an exact amount of litres [integer amount²³]. Dairy cows cannot produce exactly 'x' litres of milk. The farmers add water to make the amount exact 'x' litres. [...] They already know from experience how much water they can add and yet the milk is still accepted by the cooperative. (Coop 4, lesser performance)

When asked about the practices of milk adulteration and the response of the local government upon such case, another coop leader expressed his indulgence and indifference:

Well, actually it is already a public secret. Local government agencies also know about this. But what can they do? Many dairy farmers do such practices. Anyway, the milk price recently has been very low albeit rising living costs, so that such price burdens many poor dairy farmers. I think they just turn a blind eye to this fact. (Coop 7, lesser performance)

Another remarkable example of opportunistic behaviour is the high incidence of bad debts among dairy farmers and VUCs as a result of loose regulation concerning e.g. collateral requirement, selection criteria, and credit disbursement of the subsidised loan programmes provided by GoI. On the one hand, such high incidence was caused by incorrect perception of the programme.

There was high incidence of loan default because many dairy farmers were feeling not obliged to pay back their loan. The loan programme was called "President's help" (*Bantuan Presiden*). So, if it is a "help" why should they pay back? [...] It was not purely the fault of the farmers, but also of the inappropriate programme socialisation. (Coop 4, lesser performance)

Several dairy farmers even commented that it is as a matter of course that dairy farmers did not pay back, because they were basically poor smallholder farmers needing help or grant, not loan, from GoI. On the other hand, the high incidence of loan default was caused by weak rule enforcement that was reinforced by the social norm *pakewuh*.

Actually it is the dairy farmers who still owe money to the VUC. However, since legally VUC was the guarantor for the loans taken by the dairy farmers, eventually VUC had to pay the loan with any possible means. Thanks to God VUC had paid off the loan from the bank, although delayed for several years. [...] There are indeed farmers who intentionally do not pay back the loan, because they know there is hardly any consequence for it. [...] Some farmers gave their land certificate as guarantee. But it is impossible for VUC to sell these certificates to cover the loan repayment. We don't want to offend them. Anyway VUC also has good relationship with them. (Coop 5, lesser performance)

²² See Sub-chapter 10.1.2 for milk adulteration practices in the early movement of dairy cooperatives.

²³ This means that the amount of milk delivered is e.g. not 12.7 or 15.3 litre, but exact 13 or 16 litres.

Nevertheless, it is also important to note here, that in some cases VUCs could not demand loan repayment from the dairy farmers since the dairy cattle given to the farmers had died just several months after the handing over. Obviously the cattle were already sick and not of good quality – this was a result of malfeasance by coop leaders and staff (see below).

Cooperative leaders and staff

During a survey into a specific area infamous for prevalent practices of milk adulteration, it was discovered that cooperative staff working in a MCC was adding hydrogen peroxide (H_2O_2) as antimicrobial agent into milk to reduce bacterial growth, thereby increasing the shelf life of low-quality milk. Despite the fact that hydrogen peroxide in low concentration, such as 3%, is safe and frequently applied in domestic uses, the unsupervised use of this chemical for food material is hazardous²⁴. Furthermore, the use of chemical to preserve milk is prohibited by law.

In the same area, another case of malfeasant behaviour among farmers is also prevalent: forcing beef cattle to take-in water as much as possible – until the animal dies – before slaughtering to increase the body weight. Such malpractices are already known by the people residing in that specific area, including government officials. When asked about how their opinion on such malpractice, the common perception expressed was that such practices are “cheating; causing tremendous, unnecessary pain to the animals; and should be stopped”. However, given the fact that such practices are still continuing despite occasional inspections by the local government officials, it seems that in general such unlawful actions are not consistently confronted, controlled, and punished.

Against the background of the weak law enforcement and inadequate remuneration²⁵ for cooperative leaders and staff, earning additional money through malpractices and malfeasance may indeed be more alluring. Reported cases are, first, the misuse of position and access in the cooperative to get personal benefit by taking commission from the conclusion of a loan agreement or by deducting a portion (larger than the officially agreed) of the loan disbursed to

²⁴ See Lück (1962) for a concise yet comprehensive discussion on the use of hydrogen peroxide in dairy industry, in particular in developing countries with limited infrastructure.

²⁵ See Sub-chapter 10.2.2.2.

the dairy farmers. Annoyed dairy farmers were complaining that they were not given any other choice than to accept such condition, since the options were either to take the loan in reduced amount or to leave it. Second, as loan programmes for dairy farmers were sometimes delivered as dairy cattle instead of money²⁶, coop people responsible for the purchase of dairy cattle had the opportunity to take advantage from the purchase. By giving dairy farmers low-quality, cheaper dairy cattle; they could keep for themselves the value difference between the agreed loan and the actual purchase value.

Interestingly, the most common responses toward such malfeasance were “that is just normal here” or “it is a usual thing”. Such tone denotes familiarity, tolerance, acceptance, – and to some extent – apathy, and indifference. The understanding behind the responses may be that such malfeasance has occurred frequently and is already well-known, yet is not corrected or intervened, so that it continues unchecked. The gravity of the opportunistic behaviour is even perceived to the extent that it is incorrigible, as expressed by an expert in community development who has been providing support to the dairy farmers in the area:

I think it is useless to improve the existing system [of cooperatives and dairy farmers]. It is already too corrupt; it is too difficult to correct. It has always been like that. It is better to form new dairy farmer group or cooperative with those dairy farmers really willing to grow. Such people can benefit from our support. (Exp 9)

Local government

It was also identified that many government support programs were not adequately addressing the needs of dairy farmers and cooperatives; and that there were indications of misused support programs by government officials or cooperative leaders. In the lesser-performing interaction system there was a case of equipment grant, i.e. pasteurisation machine, from the local government to VUCs. However, the machines were not usable at all because they had fundamental, irreparable technical deficiencies; although the VUCs had already proposed adequate technical requirements for the machine. During the verification process VUC leaders had actually the chance to report the technical deficiencies, yet they were reluctant to do so.

²⁶ The intention of such programme was actually to reduce the risk of loan default. By giving money to the dairy farmers the probability that the loan is spent for something else than buying dairy cattle is higher. Such cases had already occurred previously.

Like in the case of the tender of pasteurisation machine by the government, when I was asked by the controller whether the machine is functioning properly, I would and could not give any answer. I just told them to check by themselves, even though I knew the answer. If I had said the truth, I might have offended the feeling of the tender-winner and their group. This would have damaged my relation with them and I don't want to have such problem. (Coop 4, lesser performance)

Similarly, government officials involved in the invigilating of the tender process had opted for avoiding any conflict potential which could place them into an inconvenient situation. An invigilator had to obey and sign the invigilation report because it was his superior that had the interest in the legal settlement of the tender transaction as the tender winner was a close relative of the superior.

Indeed, he is a victim of *pakewuh*. His superior is now even a special staff of the district head, so that it becomes more difficult to correct the tender project through legal ways. [...] Although he is clean, he could be involved in further trouble because he has signed the report as invigilator due to *pakewuh*. (Coop 4, lesser performance)

In a similar vein, Riethmuller et al. (1999b) concluded in a survey among decision makers in the dairy value chain:

The finding that government policies are regarded as strength of the industry by four of the 12 respondents is not surprising. The reason for this is that these respondents may well be involved in the administration of the policies, giving them a vested interest in ensuring the policies are seen in a favourable light. (Riethmuller et al. 1999b, p. 25)

10.2.1.7 Other institutional factors: availability of natural resource

Apart from the institutional aspects described above, the availability of natural resources for the dairy farming also plays an important role. In areas with higher altitude sourcing water both from ground water (well) and water spring (river) is difficult, particularly in dry seasons. This situation also negatively restricts the availability of feedstuff, in particular green forage.

10.2.2 Micro variable: Leaders and staff of lower-performing cooperatives

10.2.2.1 Intermediate outcome: Weak regulative aspect of the interaction system

Against the background of increasing number of dairy farmers who stop delivering their milk to the coop²⁷ (LF1), coop leaders need to find a solution to the situation: decreasing milk delivery from the dairy farmers is critical for the sustainability of the overall cooperative busi-

²⁷ See Figure 10-9.

ness, as the dairy business constitutes 30 – 40% of the total cooperative turnover. The decline was detrimental, reaching more than 50% of the initial milk output of the coop.

These days it is not possible to impose price differentiation based on milk quality. If we give lower price due to lower quality, then the dairy farmers will stop delivering milk to the cooperative and sell it instead to middlemen. The cooperative will have much more losses. Several years ago our production capacity was still around 10 thousand litre per day, but now it is only around 3 – 4 thousand. (Coop 5, lesser performance)

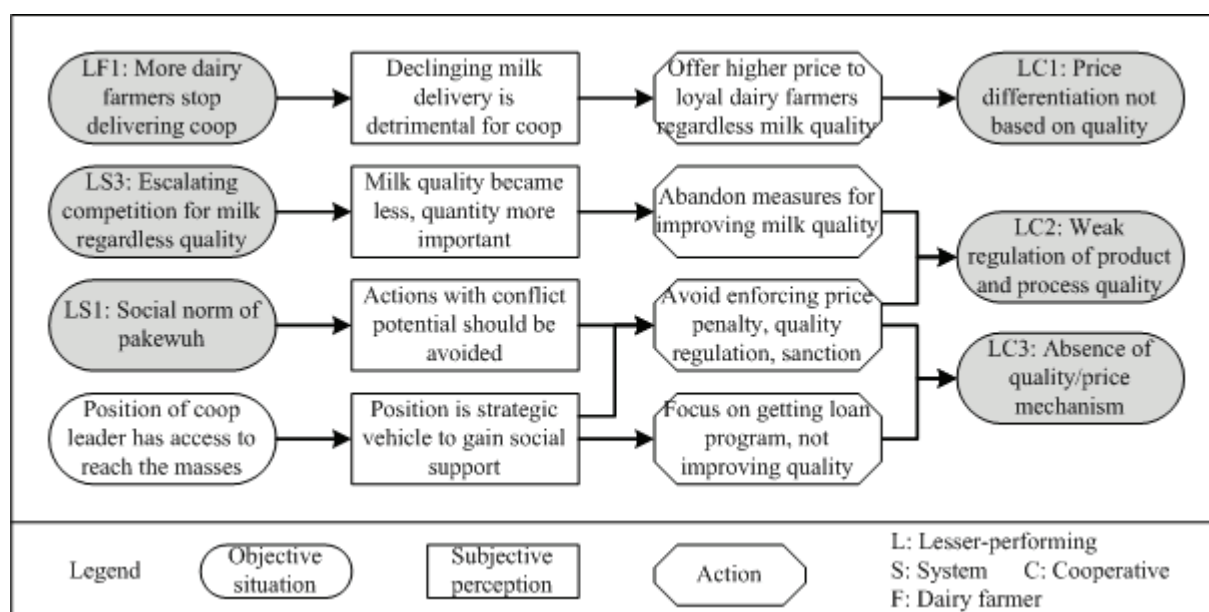


Figure 10-5 Intermediate outcome: Weak regulative aspect of the interaction system

Source: own compilation

To hamper and reduce the incidence, coop leaders offered higher price to those dairy farmers willing to continue selling milk to the cooperative – to “loyal” dairy farmers.

We now have price differentiation, albeit small. There are some locations where the dairy farmers are good and loyal. We give them a slightly higher milk price than other locations. (Coop 5, lesser performance)

I admit that some locations receive higher milk price although their milk quality is not better. But this is necessary to appreciate them who have been delivering milk to the cooperative for a long time and being good dairy farmers. (Coop 4, lesser performance)

However, since the assessment of “loyalty” is not performed transparently based on a set of well-defined and socialised criteria but rather exclusively by coop management, it was heavily criticised that those loyal farmers receiving higher price were relatives of or those having good relation with coop leaders and staff. On the contrary, coop management asserted that they monitored the track record of each dairy farmer and thus had the capacity to make a

sound judgement. The result of this action was the establishment of a “price differentiation” system, yet not based on quality but rather on subjective criterion of loyalty (**LC1**).

Situated in an escalating competition for milk against intermediary traders (**LS3**), securing milk supply from the dairy farmers was more pressing, than achieving higher-quality, to sustain the dairy business of the cooperative. If the VUC were to give warnings, price penalty, or reject the milk delivery which could not satisfy the quality requirements; such measures would not achieve the desired result of giving a negative incentive to the dairy farmers for low-quality milk, because the same milk delivery would still be accepted by the intermediary traders. Such measure would only deter the dairy farmers from selling milk to the VUC, thereby causing more losses for the VUCs.

Nowadays, milk quality does not count anymore. Everyone needs milk and is willing to buy milk in any quality. (Coop 5, lesser performance)

As a result, coop leaders had to set aside quality requirements. Measures for quality improvement – which previously had been the key issue for sustainable development of the dairy value chain – were abandoned and the ongoing endeavour to establish quality regulations was nullified (**LC2**).

As described in Sub-chapter 10.2.1.3, individuals who internalised the norm of *pakewuh* (**LS1**) are inclined towards avoiding any action which potentially cause conflict or insult the feeling of others and thus impair inter-personal relationships. Such orientation is further amplified by the low-degree of anonymity in smaller, rural communities.

Imposing price differentiation [based on quality] is not an easy task. For example, in some locations we have dairy farmers who have good relationship with the cooperative. They have been member for a long time, do not have any loan default, and never caused any trouble. Even though their milk quality is not too good, it is impossible to give them lower milk price. We don't want to insult their feeling. (Coop 5, lesser performance)

Hence, in societies where *pakewuh* predominates, the enforcement of any rule that entails negative incentive, punishment, or sanction is difficult; the same applies to the enforcement of product and process quality regulations which entails warnings and sanctions, as well as of the quality/price mechanism which includes price penalty. The avoidance of rule enforcement, combined with the abandonment of quality improvement measures, results in weak regulation of product and process quality, since every single rule necessitates enforcement to function.

Another macro variable (objective situation) that indirectly causes the weak regulative aspect of the interaction system is the vested interest of coop leaders. Individuals who hold the posi-

tion as coop leaders have the strategic access to reach the masses particularly in a rural area, since many of rural inhabitants are member of VUC. Therefore, if coop leaders can implement ‘popular’ cooperative programme like subsidised loan programme, they can attain popularity and social support. On the contrary, ‘unpopular’ cooperative programme like quality regulations or price penalty for low-quality milk can blacken their image. Hence, the more a coop leader is striving for popularity, the less likely the coop leader will implement quality regulations and quality/price mechanism.

10.2.2.2 Intermediate outcome: Low professional performance of cooperative

One of the unique cooperative principles invented in Indonesia is the ‘principle of familialness’²⁸ (literal translation of ‘*asas kekeluargaan*’). This principle means that inter-individual relations in a cooperative should reflect or resemble the relations of individuals in a family: harmonious relationship among individuals has the highest value, mutual help is expected, and differences or conflicts should be settled through discussion and consensus.

While per se such principle is by no means detrimental for the cooperative performance; there is, however, negative implications in the management of personnel. As employer/employee relation is regarded as an informal mutual help among family members, the remuneration system does not build on formal-professional basis which follows, at least, the government regulation on minimum salary.

[...] Well, you cannot expect much [salary] from the cooperative. Our cooperative is small and not able to pay professionally. Colloquially said, the staff we have right now is just some people helping us and we give them in turn some compensation. But it is not much, not sufficient for securing the family’s livelihood. (Coop 5, lesser performance)

The recruitment of cooperative staff is frequently not based on selection criteria of professional skills and competences. Staff is recruited among members (or their families) who have good track record (e.g. no loan default) or from those having good relation with or family connection to coop leaders (nepotism). Also, there is an indication that the employment by the VUC is not based on the prevailing personnel needs; employment is rather considered as a

²⁸ The term ‘familial’ means ‘of, relating to, pertaining to, or characteristic of a family’. ‘Familialness’ is the noun.

reward (giving additional income) for loyal members. As a result, the number of cooperative staff is higher than what is actually necessitated:

Another interesting finding is that the number of cooperative staff is also relatively high, namely around 20% of the number of dairy farmers. It is obvious that such high number is not rational, indicating high inefficiency. (Yusdja 2005, p. 260; translation by author)

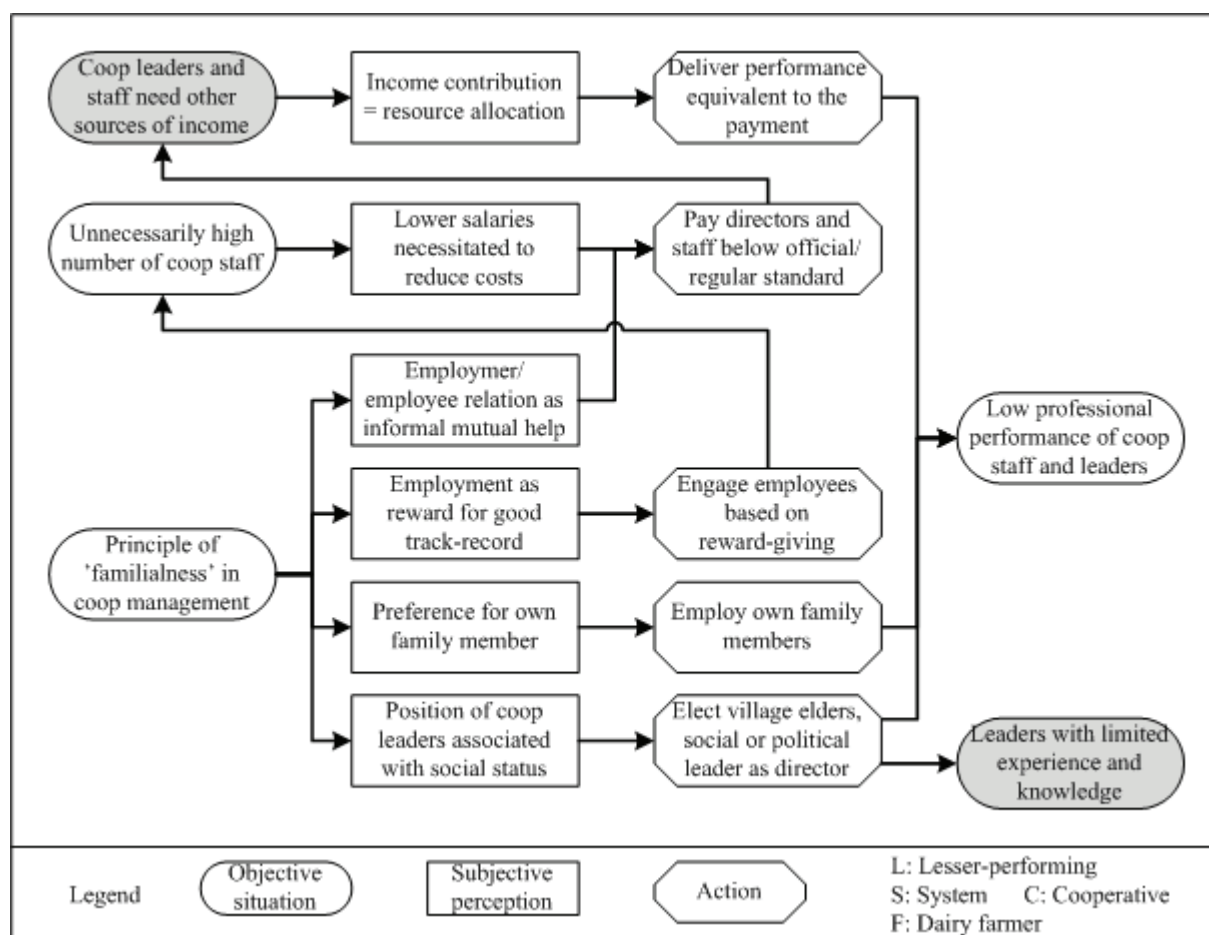


Figure 10-6 Intermediate outcome: low professional performance of cooperative

Source: own compilation

Considering the need of reducing operational costs while employing an unnecessarily high number of personnel, coop management has thus to lower the salaries. Consequently, cooperative directors and staff have usually other sources of income besides that from the cooperative. Assuming that in this case coop staff and leaders would allocate their resources and efforts for the job in proportion to the income generated from the job, they would deliver minimum professional performance equivalent to the minimum remuneration. This is more likely to happen when the position held in the VUC is considered as the sideline job. Also, against the background of weak rule enforcement, malfeasance may be considered as a feasible alternative to generate additional income. Moreover, such perception is empowered by the

widespread acceptance and tolerance of opportunistic behaviour and its recurring – thus habitualised – occurrences.

Another important finding is that in rural areas the position as cooperative leader is closely associated with high social – and to some extent political – status: individuals considered as senior, experienced, and possess higher social status (village elders, social or political leaders) are usually elected as cooperative leaders. However, these individuals are not necessarily the right persons who have, first, the motivation and incentive to develop the cooperative; and, second, the vision, profound understanding of the business, commitment and capability to lead and introduce progressive changes into the cooperative. Nevertheless, it is important to emphasise at this point, that the selection criteria described above are not necessarily inadequate insofar as professionalism (competency, commitment, etc.) is guaranteed.

The selected actions, in turn, explain the low professional performance of cooperative staff and leaders. The collective problem of lack of professionalism is reflected by some observed indicators:

- Among 5 lesser-performing cooperatives only one employs a professional manager to run the daily business operations of the cooperatives, while in the other VUCs the function of operational manager is performed by the cooperative directors.
- While the normal work hour is 40 hours per week (5 work days @ 8 work hours), VUCs' daily operation generally starts at around 7 or 8 am and ends already by noon. Moreover, during visits to the VUCs it was observed that the working capacity of the cooperative staff was not optimally exploited – many of them were idle.
- When cooperative staff was asked for written documentation on some basic information such as number of cooperative members, MCCs, livestock population, milk quality test, and delivery recordings; such data were not available and had to be collected extra.

Indeed, such findings are confirmed by many other researchers concluding that the lack of professionalism or – cushioned in a softer term – the limited quality of human resource is an influential inhibiting factor of cooperative development²⁹.

²⁹ Firman (2008, p. 7), Suradisastra (2006, p. 14), Stanton, Emms and Sia (2005, pp. 88–95), and many others.

10.2.2.3 Intermediate outcome: Inadequate service provision to dairy farmers

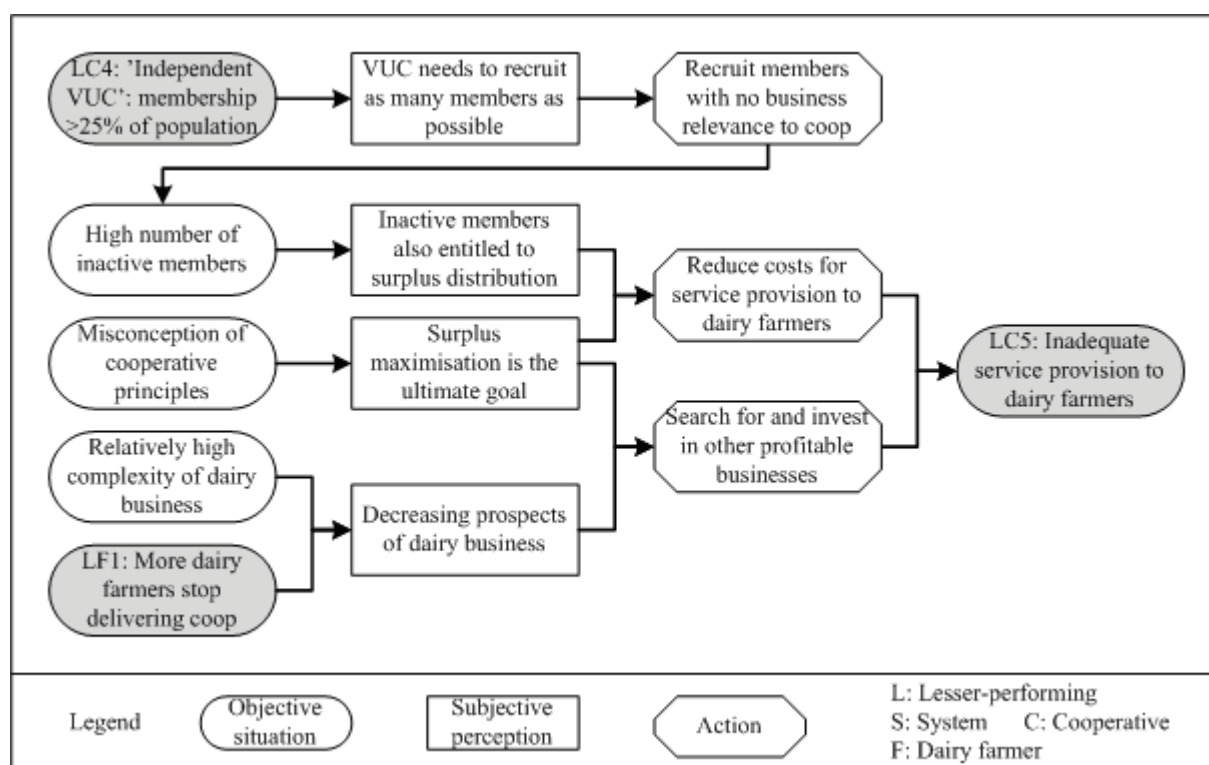


Figure 10-7 Intermediate outcome: Inadequate service provision to dairy farmers

Source: own compilation

In 1988 the Minister of Cooperative enacted a decree that the support policies for VUCs should aim at the achievement of the so-called “independent VUC” or “*KUD Mandiri*” (Masngudi 1990, p. 31) (LC4). One of its assessment criteria was that the number of VUC members should be at least 25% of adult population in its working area – indeed a daunting task. As the fulfilment of the requirement was one of the prerequisites to access the government support policies, VUCs – at least those observed in this study – needed to recruit as many members as possible. This prompted VUCs to artificially inflate the number of coop members by also registering the family members of one family business – as it is the case for dairy farming –, although the membership regulation was ‘one business one membership’. The number of members had indeed increased, but the number of actual businesses remained the same.

With such action VUCs have indeed many members, but a large proportion of them – if not most of them – are inactive, i.e. not running dairy farming. While inactive members do not contribute to the coop business, they are still expecting and officially entitled to the annual

surplus distribution. This means that VUCs have to bear additional “burden” of generating more surpluses to be distributed to the members:

We have currently 8,672 members; among them less than 1,000 are active members. So, if we go back to the basic principle of cooperative ‘from, by, and for the members’, such principle does not work. Because the around 7,600 inactive members are burden for all. It is difficult to apply the cooperative principle purely, because on the one hand we are obliged to increase the welfare of only active members but on the other hand we have also to increase the welfare of inactive members – this is a heavy burden. Very often the business is not by members but the gain is for members. For example, we have now loan service for purchasing motor bikes or electronic goods. This is not run by members, but the gain is for members. (Coop 4, lesser performance)

To cope with such situation, VUCs are then forced to reduce the operational costs, including the costs for providing services to dairy farmers. Consequently, the services provided by the coop tend to be minimal and inadequate (**LC5**). For example, dairy farmers complained that the quality of concentrate feed provided by the VUC had been deteriorating, presumably caused by decreasing protein content due to increasing raw material price, so that they had to source from elsewhere.

Usually with 1 kg additional concentrate feed we could get additional 2 litre milk, but nowadays it is not possible anymore. With additional 2 kg concentrate we can only have additional 3 litre milk because the quality of the concentrate feed is declining. (Dairy farmer 2, lesser performance)

With regard to the misconception of cooperative principle, there is a common fallacy about cooperative that its chief end is to maximise surplus (mostly it is even called “profit”). Such erroneous conception is further reinforced by the regulation of performance indicators delineated by GoI. These indicators – the number of members, turnover, and most importantly surplus or profit – are used as assessment criteria in determining whether a VUC is classified as potential, capable, and thus eligible for receiving government supports or subsidies. Unfortunately, the indicators give a wrong incentive to maximise surplus instead to concentrate on providing collective services to support members’ business and thus increase members’ welfare – what actually the ultimate goal of a cooperative.

Although it has always been said that the main purpose of cooperative is to improve the welfare of its members, hitherto none of cooperative's performance indicators addresses this fundamental aspect. From many reports of cooperative performance we have been reviewing more than 95% even never mentioned the improvement of members’ welfare. (Exp 5)

To maximise surplus VUCs thus follow two main strategies. The first strategy is to minimise the costs incurred for operational activities, including the costs for providing services to the members like extension, veterinary services, training and quality monitoring system. The sec-

ond strategy is to search for and invest in other “profitable” businesses than the dairy business – this is the underlying reason of the multi-purposiveness of VUC. In fact, the multi-purposiveness of VUC is even perceived as a hindrance to further develop the dairy business. Toward the question about factors inhibiting the growth of dairy farming one coop leader responded:

There are several factors. One of them is the organisational aspect of the cooperative itself. First, dairy business is a responsibility of the dairy unit in the cooperative. So it is only one among so many business units. The income from dairy unit does not return only to dairy farmers but to all members. Say, if we have 9.000 members, among them are only 200 dairy farmers. So from organisational point of view this is a disadvantage for the dairy farmers. This is a common situation in Central Java. (Coop 4, lesser performance)

In similar tone, another coop leader stated:

Actually, it is not the case that the cooperative does not have any resource at all to support the dairy farmers. But the problem is that dairy farming is only one part of the VUC. There are still many parts of VUC to be considered. These also require resources. So, the problem is not that simple. (Coop 5, lesser performance)

Besides the dairy business unit, VUC generally runs other business units such as loan service for various purposes (e.g. purchasing electronic goods or motorbikes), public transportation service (minibuses), payment of electricity bills, and retail shop selling daily consumer goods. The VUC’s services are not exclusively for its members, but rather for everyone who happens to need the services. Hence, in this regard VUC closely resembles a regular business organisation seeking the maximisation of profit. When asked about his opinion on the criticism that VUC in general is doing business just like a normal enterprise, a cooperative leader responded:

Yes, true. I am forced to do this [running various business units rather than concentrating on providing services to the members], because in practice my cooperative is demanded to yield profit. But if we only rely on the businesses by members, their contributions are too small. They do not possess the awareness of being a cooperative member or of partaking in the cooperative. (Coop 4, lesser performance)

Since the ultimate goal of VUCs is to maximise surplus through the optimisation of different business units, VUCs allocate their limited resources (including the ‘efforts’ and ‘time resources’ of cooperative leaders) in accordance with their perception of the business unit’s prospects. Now, the prospects of dairy business – particularly during the “turbulence time” –

had decreased because while the relatively high complexity³⁰ of dairy business remains the same and even increases, the return from dairy business decreased since an increasing number of dairy farmers stop delivering the cooperative in the course of fierce price competition against intermediary traders (LF1). Thus, the motivation and drive to search for and invest in other profitable businesses became higher. The more intensive the efforts and time resources allocated for other coop businesses, the less are available for the dairy business. As a result, coop management allocate less efforts and time resources to optimise the services provided to its members (LC5) – collective services which are necessary to reduce the operational cost of each member and thereby improving their businesses performance.

10.2.2.4 Intermediate outcome: Lack of improvement measures in VUCs

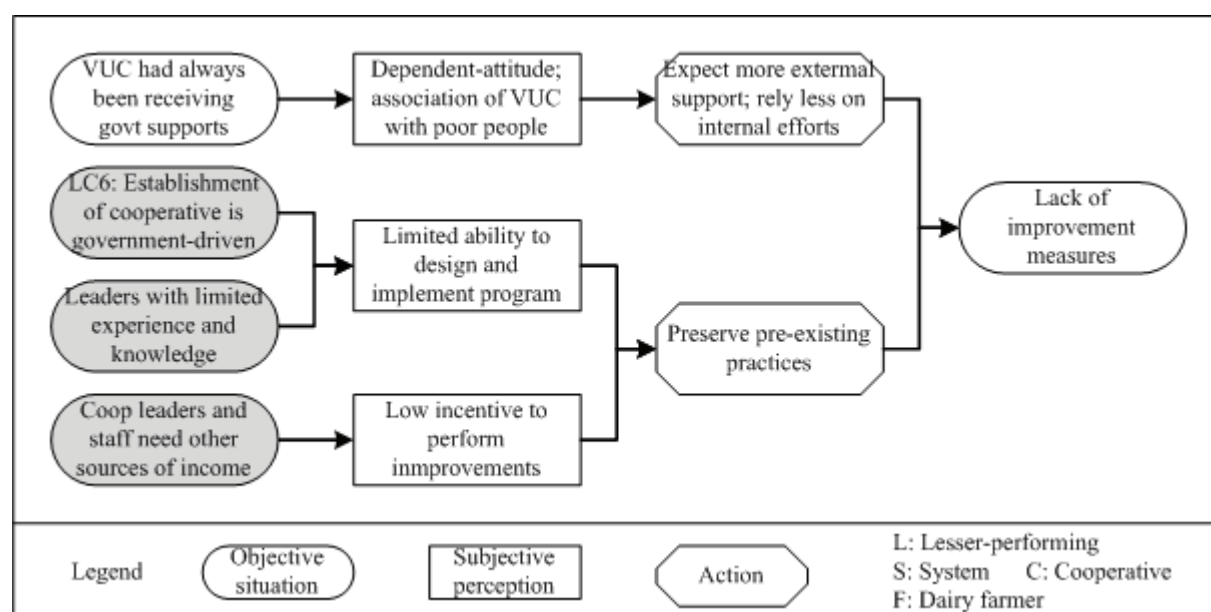


Figure 10-8 Intermediate outcome: lack of improvement measures in VUCs

Source: own compilation

The brief historical analysis of cooperative development³¹, in particular VUC, has shown that the role of and intervention by GoI had indeed been highly influential on cooperative devel-

³⁰ Dairy business exhibits higher complexity compared to other coop businesses (e.g. payment service for electricity bills) as it involves complex quality regulations, quality/price mechanism, service provision for a large number of dairy farmers, and so on.

³¹ See Figure 10-3.

opment. Apart from defining guidelines, principles, and programs for VUCs; GoI had also provided many supports and subsidies. These, unfortunately, had undermined the ability of VUCs to create and sustain their own programme and activities using member contributions. VUCs had been unable to exercise the basic cooperative principle of self-help and self-reliance: after the fall of the New Order regime the number of VUCs sharply declined from 9,635 in 1997 to 6,946 in 2000, meaning that more than 2,500 VUCs were shut down within 3 years³².

For coop leaders – particularly those who have experienced the “golden time” of cooperative development programs by GoI in 1980s – VUCs are an institution of poor and marginalised farmers in rural areas that needs constant support from the government to function properly. During interviews and meetings with coop leaders and dairy farmers it was frequently stated that the development of VUCs depends on the willingness and intensity of government support. The decline of VUCs in recent years was attributed to the diminishing government supports as opposed to the full-support given during the New Order era – the “golden time”.

Nowadays, VUC experiences difficulties to develop further. VUC is comprised of "small people" [ordinary or poor people having no power]. They need supports. If VUC could get government support like it did during the time of Mr. Bustanil Arifin [the Minister of Cooperative in 1983-1993], I am sure VUC can help its members more. (Coop 8, lesser performance)

Based on such perception, coop leaders put – to some extent – the responsibility of developing VUC on external supports. Internal potentials and efforts by coop leaders, staff, and members are not viewed as a driving factor for improving coop performance. As a result, there is hardly any progressive change introduced by coop leaders.

Instead of being initiated by individuals who were willing to improve their business collectively, VUCs were established through government interventions (**LC6**). Furthermore, the working area of VUCs also follows the formal administrative borders of the respective village or sub-district where they operate. Similarly, as the establishment was government-driven, VUCs’ programme and activities also followed the government programme.

Yes, during 1979 – 1983 we received not grant but loan for purchasing dairy cattle from central government [...]. But this programme was a significant initiation step of dairy production in Boyolali. Afterwards the national Union of Indonesian Dairy Cooperatives (UIDC) was founded

³² See Suradisastra (2006).

in 1982. Milk produced throughout the district of Boyolali was managed only by 'Milk Central' (MC); this was the embryo of our VUC. After the establishment of UIDC Central Java every VUC in Boyolali was instructed by the government to collect milk produced in their own work area. That was the beginning of 6 VUCs running dairy business until now. Actually, there were more, but only these 6 have survived. (Coop 4, lesser performance)

During the green revolution in 1970s – 1980s, VUCs' prime role was to implement the government programme of achieving self-sufficiency in rice production, namely by assuming functions of distributing subsidised inputs (seeds, fertilisers, and pesticides), executing loan programs, and participating in the extension system. This does not necessarily mean, though, that these services were not required by the farmer members. The downside, however, was that from the outset VUCs did not orient its policy toward providing services required by the members and did not learn the capability to adjust their programme to the dynamic needs of the members; VUCs just followed the programme delineated and instructed by the government.

Another factor contributing to the limited ability to design and implement programme for members is the fact that many VUC leaders have limited knowledge and experience with dairy business, as they are elected from individuals possessing higher social status in rural area who are not necessarily the right person for the position³³.

It is difficult to get a cooperative policy that supports the development of dairy business. Because the directors themselves are not dairy farmer, they do not understand the business. This is different from specialised dairy cooperatives in West and East Java, where cooperative members are exclusively dairy farmers. Since this is a prerequisite of cooperative membership, every elected member of the board of directors is automatically dairy farmer who knows well the business, difficulties, and opportunities. (Coop 4, lesser performance)

For such leaders, limited knowledge or information about the dairy business means that they are not able to objectively assess the economic potentials and opportunities of the business. As any improvement measures requires resources or investment, the absence of adequate information heightens the subjective risk-perception from such undertaking. Hence, for the coop leaders it is better to preserve the pre-existing practices with a certain outcome, albeit not the most optimal, rather than to embark on an investment with uncertainty.

³³ See Figure 10-6

The last macro variable causing indirectly the lack of improvement measures in VUC is the fact that coop leaders and staff need other sources of income on account of the low remuneration standard. Premising on general assumption that individuals follow instrumental rationality in pursuing material interest through their profession, the low remuneration given by VUCs does not provide enough incentive of material interest for coop leaders and staff to make extra efforts to introduce innovative and progressive changes into the pre-existing practices. As a result, improvement measures are unlikely to be introduced by coop leaders and staff.

10.2.3 Micro variable: dairy farmers

10.2.3.1 Intermediate outcome: More dairy farmers stop delivering milk to coop

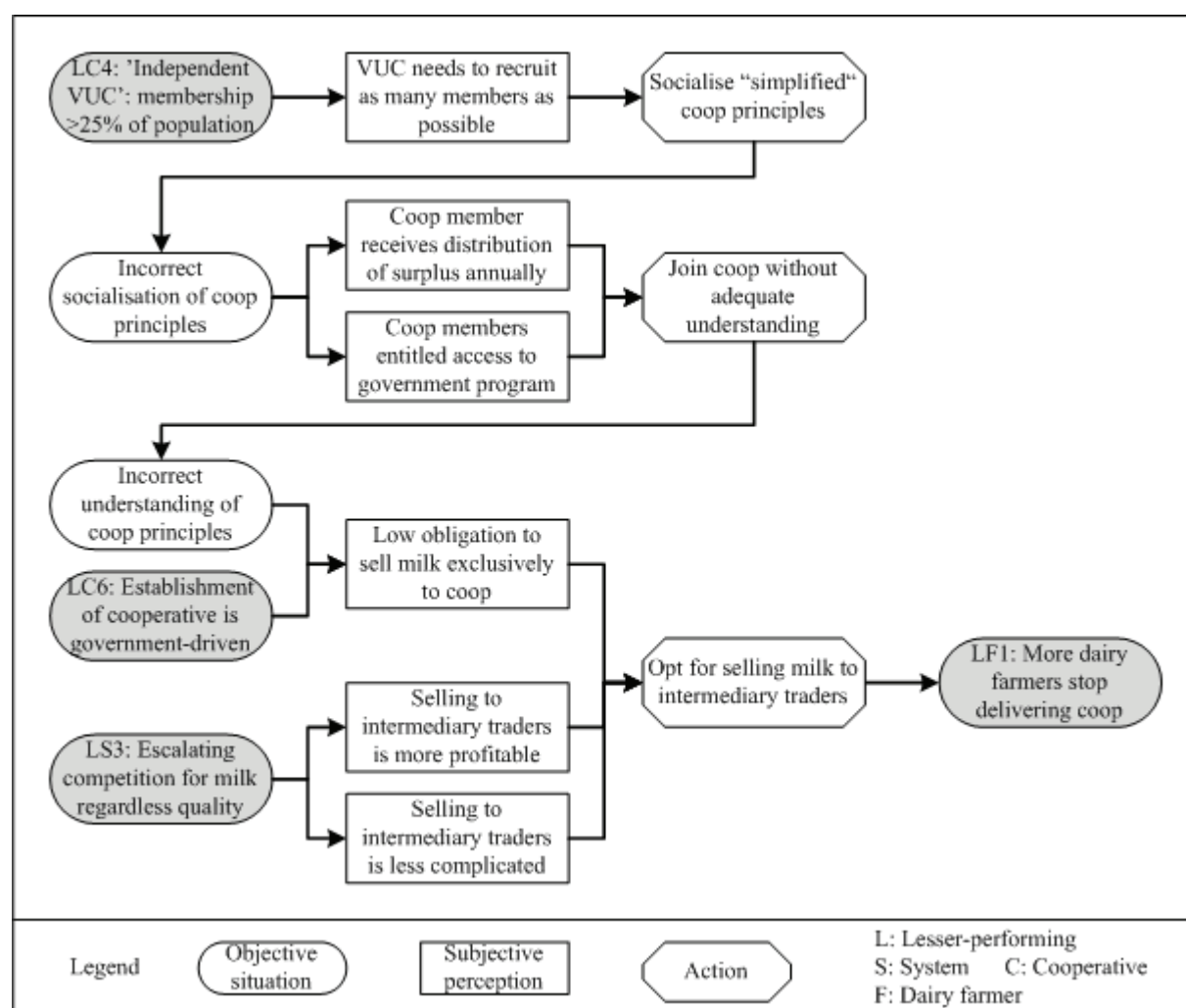


Figure 10-9 Intermediate outcome: more dairy farmers stop delivering milk to coop

Source: own compilation

Against the situation that VUCs should recruit as many members as possible to comply with the government requirement of ‘independent VUC’ (LC4), VUCs ran socialisation in rural areas to introduce VUC and to attract prospective members. However, the challenge was that the cooperative as well as its principles were foreign to rural people. Arguing that with low education standard rural farmers would anyway not be able to understand the basic principle of cooperatives, VUCs “simplified” the introduction of VUC by promoting mainly the benefits of being VUC member: access to government programs like subsidised loans as well as receiving annual distribution of surplus.

The socialisation of such “simplified” yet incorrect coop principles were indeed understood by the dairy farmers. They registered for cooperative membership with the motivation to receive surplus distribution annually and the expectation to access government subsidies.

Well, the only benefit is getting surplus distribution. [...] We got subsidy for veterinary services. There was even “*apel sapi*” [an event where dairy farmers bring their cattle together on a field for health inspection or pregnancy check]. But at present we do not receive such thing anymore. (Dairy Farmer 1, lesser performance)

Hence, from the outset the dairy farmers have a false understanding of how cooperative functions and what their role, rights, and responsibilities as member. Ideally, that VUC buys dairy farmers’ milk and then sell it again to DPIs should be understood as the provision of collective services for dairy farmers, i.e. milk collection and bulking, cooling down (if any), transportation to DPIs, and administration for transaction. These services are paid by the member contributions, namely the deduction from the milk price paid by DPIs or, in other word, the price difference between the milk price received by VUC and the farm-gate milk price. The same member contributions are used for paying other services like provision of concentrate feed, veterinary service, artificial insemination, training and quality monitoring system, etc.

Nevertheless, in reality dairy farmers do not perceive the situation in such way. They perceive VUC as a regular milk-buyer similar to other milk buyers. They are also not aware of the responsibility to deliver member contribution and the right to access collective services paid from the member contribution. Moreover, as VUCs were established by the government (LC6) and thus indicating weak initiative of and minimum involvement by the members, the sense of ownership is also low, meaning that the advancement or decline of VUC is not their concern. In this respect, the dairy farmers feel no or weak obligation to sell their milk exclusively to the VUC.

On the other hand, the competition for dairy farmers' milk had been escalating (**LS3**). This was indicated by the proliferation of intermediary traders or middlemen. The middlemen were able to provide better incentives to the dairy farmers. First, they offered a higher price than the VUCs which applied considerable deduction from the milk price paid by the DPIs for paying the organisational and operational costs as well as the repayment of loan by the dairy farmers³⁴. Second, selling to the middlemen reduced the complexity of and resource use for dairy farming, because the middlemen were the ones visiting the dairy farmers (no resource used for delivering the milk to the MCC) and milking the dairy cows (no resource used for milking and maintaining the hygiene). The downside, however, was that the milk quality was jeopardised: the middlemen added chemical preservatives to prevent the milk from spoiling since they operated door-to-door, thereby requiring much more time to collect milk before it is cooled down or delivered to the DPIs. Moreover, the middlemen also suggested the dairy farmers to adulterate milk with water to get higher milk income.

Yes, there are such farmers [who adulterate milk with water]. Even sometime ago it was done openly. The milk middlemen offered us to add water into the milk, for example 9 to 1 [90% milk – 10% water]. The end price was of course better than the price given by the cooperative. Those selling pure milk were interested to play along. (Dairy Farmer 1, lesser performance)

The conditions offered by middlemen were, of course, more advantageous for the dairy farmers, in particular those viewing dairy farming as a sideline job: higher milk income, less complexity, and less resource use for dairy farming. Even for those selling pure milk, selling to middlemen was also an alluring option, because pure milk did not receive higher value. As a result, many dairy farmers opted for selling milk to the intermediary traders, thereby resulting in the decline of milk delivery to the VUC (**LF1**).

10.2.3.2 Selected action: Adulterate milk with water

With the general acceptance of opportunistic behaviour³⁵ (**LS2**), dairy farmers perceived that opportunistic behaviour is a viable alternative of action which brings additional benefits, yet faces hardly any negative consequence. With such situation and perception, not behaving opportunistically is even a loss: not only honesty is not rewarded; it bears the opportunity cost of

³⁴ There is an indication that VUCs applied higher milk price deduction than actually required to repay the default loans by dairy farmers. See Sub-chapter 10.2.1.6 for the incidence of default loans.

³⁵ See Sub-chapter 10.2.1.6 for the prevalence and acceptance of opportunistic behaviour.

losing e.g. 10% of the milk income – the additional milk income that can be generated through adding water. As a result, there are double incentives for the dairy farmers to adulterate milk with water.

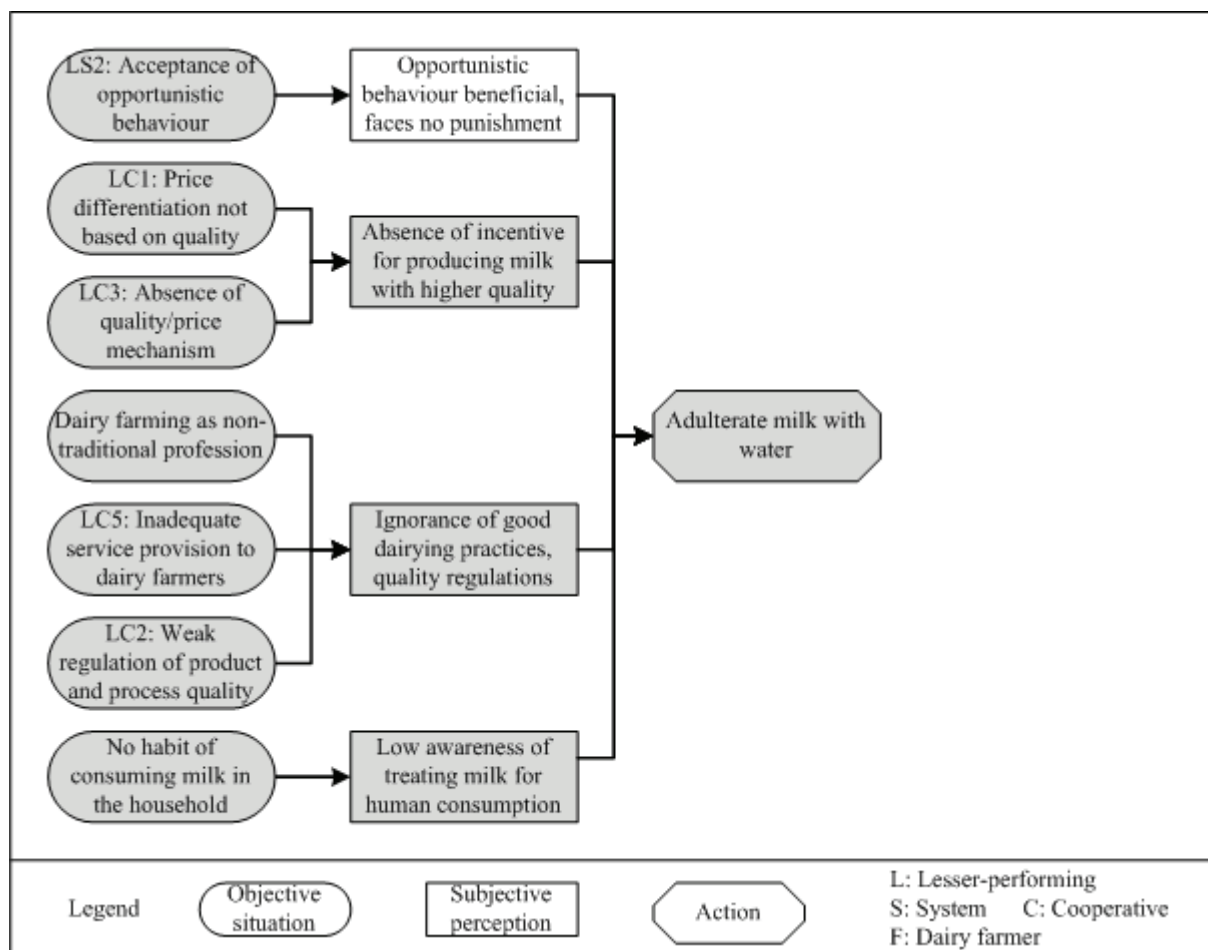


Figure 10-10 Selected action: Adulterate milk with water

Source: own compilation

Similarly, since the price differentiation is not based on quality (LC1) and the quality/price mechanism is absent (LC3), dairy farmers receive the same price for both low and high quality milk. Hence, there is incentive to produce low quality milk and to adulterate it with water to get higher milk income.

Why dairy farmers opt for adulterating milk with water is also caused by their limited knowledge of good dairying practices and quality regulations. As dairy farming is not a traditional profession, the practices in keeping dairy cattle follow traditional management which does not consider the specific requirements in handling milk. Thus, in such situation dairy farmers require information from outside their traditional system about how dairy practices should be.

The provision of such information should be one of the main responsibilities of the cooperative. But since VUCs provide inadequate training and extension service (LC5), most dairy farmers do not know about good dairy farming practices (GDFP). The same also applies to the limited knowledge of quality regulations. Most dairy farmers are not aware that the buyers of their milk (DPIs) require certain quality characteristics, that adding river or well water into milk can jeopardise the quality, and that higher quality milk should receive higher price and vice versa. Such ignorance is, again, the result of weak regulation of product and process quality by the cooperatives (LC2)

Consuming fresh milk is not a habit for dairy farmers' household and the community where they live. Thus, in general dairy farmers have a low awareness of treating milk for human consumption. Milk is produced not for own consumption but for sale. Therefore, in daily life farmers' household has limited experience with the consumption of milk, how to handle this extremely perishable foodstuff, and what health hazards can result from inappropriate treatment of milk. With such low awareness dairy farmers have no scruples about adulterating milk with water.

10.2.3.3 Intermediate outcome: Production of low-quality milk

The practice of milk adulteration with water introduces more contaminants into the milk – a further addition to the pre-existing contaminants due to low hygiene standard. Since the water added is taken from the same water source used for cleaning the shed or animal, i.e. from well or river, for sure is the bacterial and, to certain extent, chemical contamination magnified. Thus, the quality of milk adulterated with water is lower than that of unadulterated milk.

The same factors encouraging dairy farmers to adulterate milk – i.e. the absence of price incentive for high-quality milk, ignorance of both good dairying practices and quality regulations, and low awareness of treating milk for human consumption – also encourage them to handle cow and milk with low hygiene standard.

The initial intention of keeping dairy cattle was to produce manure using crop residues, while milk was considered as additional income from keeping cattle – dairy farming was regarded as sideline job. It seems that such intention is still present among dairy farmers, in particular among those who have crop farming as the primary source of income. With such orientation, dairy farmers perceive milk production as a supplementary activity and thus have no particular intention to produce high-quality milk.

As dairy farming is not a traditional profession³⁶, the method of keeping dairy cattle basically follows traditional practices in keeping indigenous cattle with several additional activities in milking. The practices in dairy farming were developed through trials and errors, since there was not any formal introductory training or extension service specifically dealing with dairy farming. The practices were then transmitted primarily through observation, imitation, interaction, and exchange of experiences among dairy farmers. With increasing number of dairy farmers adopting the practices over time, they are established as ‘common practices’.

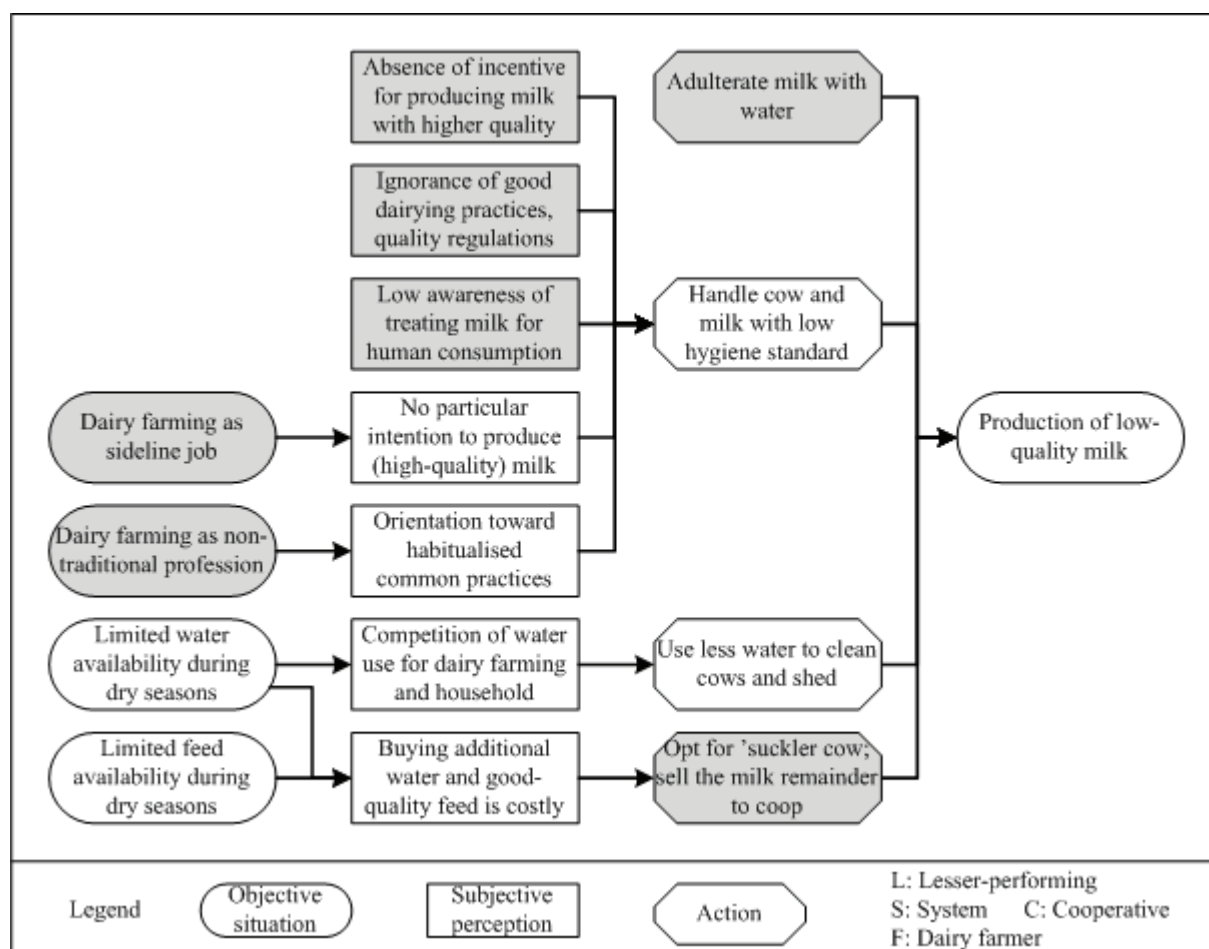


Figure 10-11 Intermediate outcome: Production of low-quality milk

Source: own compilation

For dairy farmers, the common practices serve as an orientation that defines how dairy farming should be practiced. As an orientation, common practices are thus hardly put into question

³⁶ See Sub-chapter 10.2.1.4 for the cultural-cognitive aspect: dairy farmer as a profession.

whether they are correct and already optimal, whether further improvements are necessary – they are taken for granted: during discussions with dairy farmers about why they are doing certain practices and why they are not doing other practices, the typical answer given was “that is how we do things here” or “that is what usual here”. Such responses reflected the high degree of internalisation of the practices into their cognitive pattern.

Examples of common practices related to hygiene are³⁷: using cooking oil or soap as lubricant in milking process, piling-up manure in the milking area for months before cleaned, using plastic bucket or jerry can to store milk – all are detrimental to hygiene. Such practices, albeit inappropriate, have been repeated over time and thus habitualised³⁸. Once practices became habit, they are more difficult to change, since a particular characteristic of a habit is its inertia.

Of high importance in attaining acceptable hygiene standard is the adequate availability of water. This, unfortunately, is not the case in several areas of the lesser performing interaction system, especially during dry seasons. Particularly in areas with higher altitude, ground-water level can reach more than 50 m beneath the earth surface and thereby making the pumping difficult and costly, at least for individual dairy farmer. Water sources are available, but not many, and they usually dry out during the dry season. Therefore, since the household also has needs for water, dairy farmers have limited water available for cleaning the shed and cows.

Apart from limited water resource, the availability of feedstuff, particularly green forage, is restricted in dry season. Dairy farmers have to buy additional water and green forage which are costly and thus create additional burden for the household. These, however, are required for sustaining the current level of hygiene and productivity. Therefore, for those dairy farmers with severely limited working capital, spending more money – and thus higher risk for the livelihood situation – for purchasing water and green forage is not a feasible option. As a result, they opt for an alternative which is viable with the restricted conditions, i.e. changing the orientation from milk production unto calf rearing. Dairy farmers buy young calves and then feed them with the milk produced by the dairy cow they already have – thus ‘suckler cow’. As

³⁷ See Moran (2007) for an elaborate description of the technical conditions of dairy farming in Indonesia.

³⁸ Of course, common practices are not merely a repetition and widespread acceptance of ‘meaningless’ actions; they are in fact ‘meaningful’ solutions build on the subjective perception of individuals which in turn are shaped by the specific circumstances e.g. limited resource availability and limited information.

the milk is used for feeding calves, lower hygiene standard and lower milk productivity are still acceptable. The milk remainder – in a small amount and low quality – not used for calf feeding is sold to the cooperative.

For the dairy farmers, such practice is indeed a good solution for the limited availability of water and forages as well as the limited working capital. But for the VUCs and the dairy value chain, such practice cannot provide a sound basis for the production of raw material of high-quality fresh milk in adequate quantity and continuity.

10.2.3.4 Intermediate outcome: Low animal and farm productivity

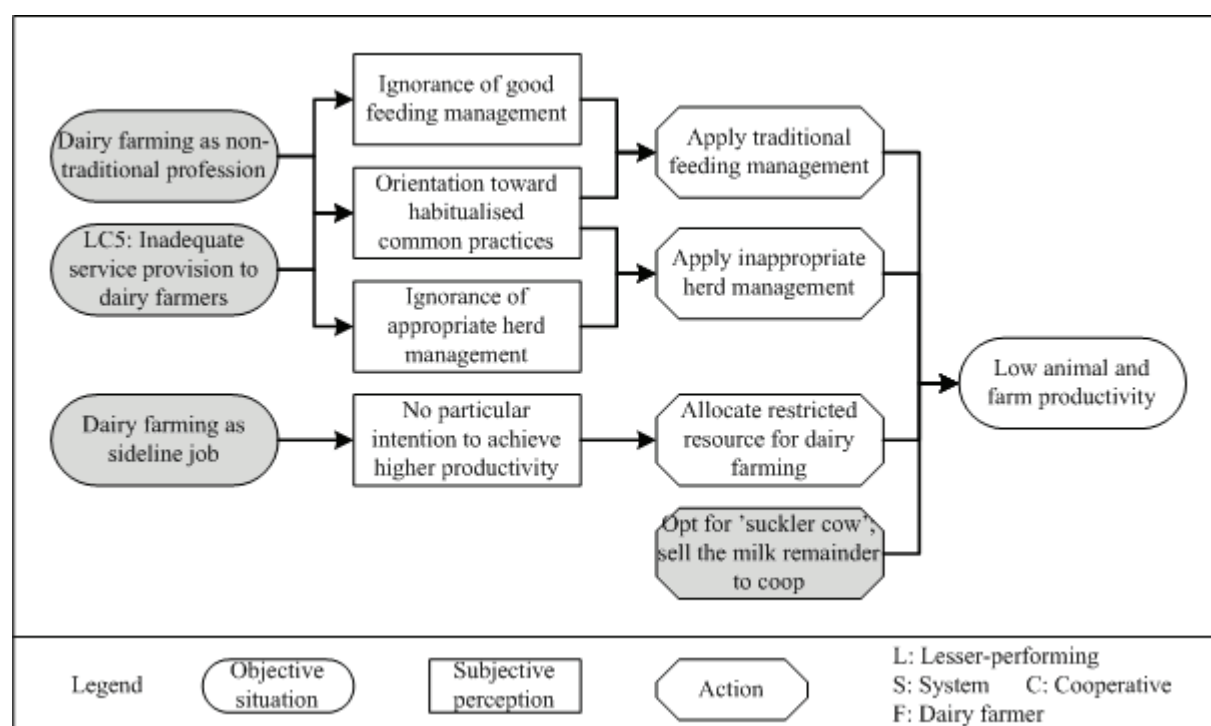


Figure 10-12 Intermediate outcome – low animal and farm productivity

Source: own compilation

The fact that dairy farming is not a traditional profession also signifies that dairy farmers are not aware of the specific management requirements for dairy farming³⁹, in particular appropriate feeding, reproductive, and health management which are the basis for productivity. The information for good feeding, reproductive, and health management should, ideally, be pro-

³⁹ See Figure 10-13 for the main aspects of smallholder dairy farm.

vided by the cooperative because, first, the provision of such information through continuous extension and veterinary services is a collective need of dairy famers; and, second, the productivity improvement of every dairy farm is in fact the main reason why the cooperative is established, i.e. to improve members' business. In particular for reproductive and health management, smallholder dairy farmers are more dependent on veterinary services, since they are not able to perform these services by themselves, e.g. artificial insemination, pregnancy control, and mastitis test – all which are influential in determining the conception rate, calving interval, mastitis prevention and treatment; and in the end the animal and farm productivity.

However, since VUCs do not provide such service (LC5), dairy farmers have limited specific know-how about good dairy farming management and have thus to orientate their management practices toward their previous experiences in keeping indigenous cattle – the habitualised common practices. The orientation toward common practices plays an influential role on the feeding management, e.g. what kind of feedstuff and how much it should be given to the dairy cows. The common practices, unfortunately, entail feeding practices which are inappropriate and, to some extent, 'superstitious'. Some examples are as follows:

- i. During dry seasons dairy farmers feed their cattle with chopped papaya trunk, as it is generally believed that it can substitute green forage or at least it can make the cattle feel full. (The fact: papaya trunk has low content of energy and protein but high fibre content. While it may make the cattle feel full, it cannot satisfy the nutrient requirements for milk production and thus is not appropriate for feeding)
- ii. Concentrate feed like rice bran or wheat pollard is not fed dry as it is, but diluted with water producing a slurry mixture ('*komboran*'). The perceived assumptions behind this are that, first, giving concentrate feed in dry form will limit dairy cows' intake or appetite; and, second, giving concentrate feed as slurry will increase its digestibility. (The fact: adding water into concentrate feed will not increase its digestibility. It can, on the contrary, limit cow's appetite, thereby reducing feed and thus nutrient intake)
- iii. Generally it is believed that increasing milk production is only attainable through feeding more concentrate feed, whereas fresh forages are regarded as irrelevant for milk production. As a result, most dairy farmers feed limited amount of fresh forages, i.e. around 20 kg per animal and day. (The fact: the basis of economic efficiency in dairy farming is, first, to optimise the production and utilisation of quality forages; and then to supplement with concentrate feed, because on energy basis, quality forages are cheaper than concen-

trate feed. With improved forage quality and more forage in the ration, e.g. 50 kg/d/cow, milk yield can be improved with lower marginal feed cost.)

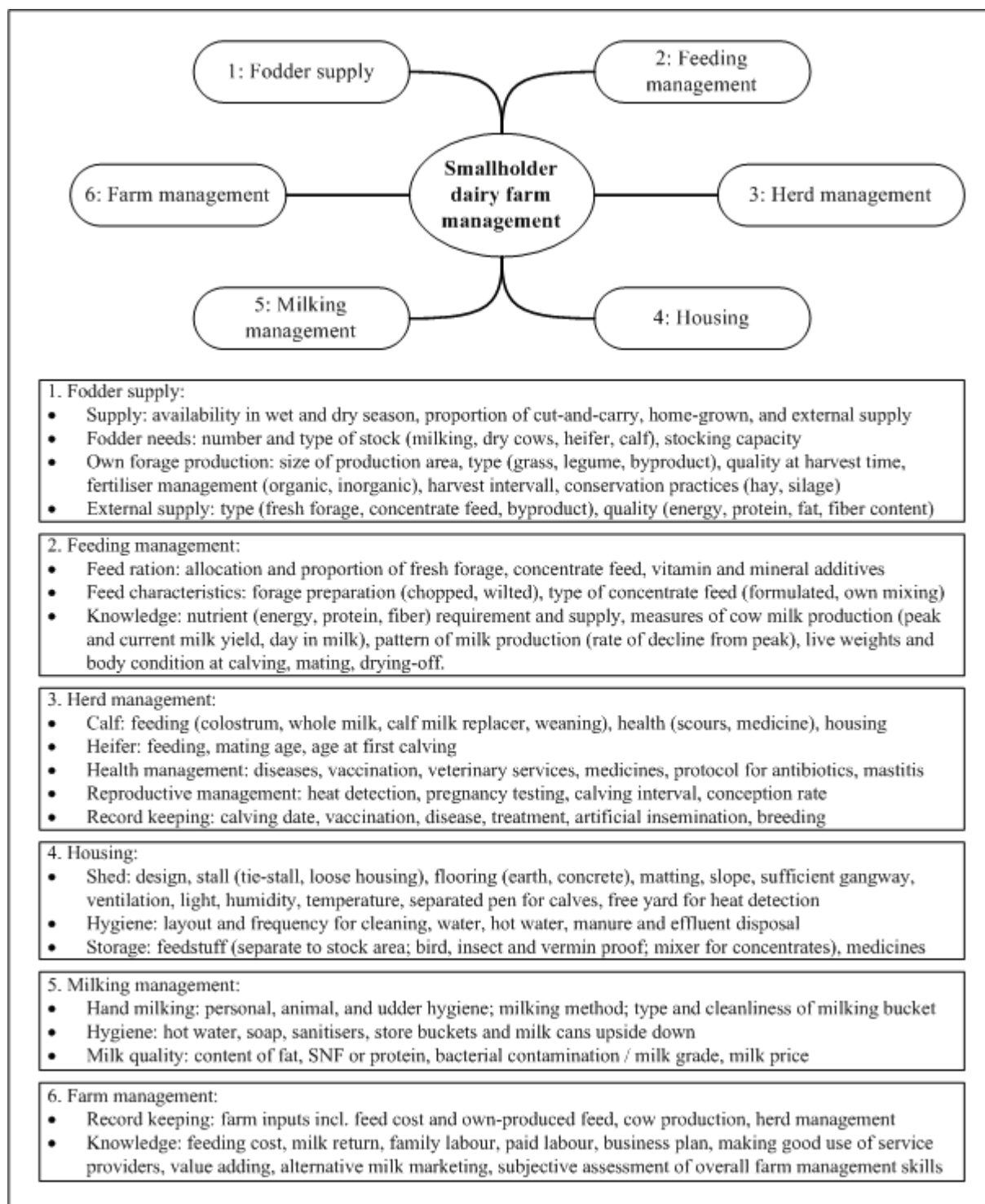


Figure 10-13 Main aspects of smallholder dairy farm management

Source: modified from Moran (December 2008, pp. 33–35)

Traditional practices do not prescribe artificial insemination. Thus, proper heat detection – as an integral part of successful artificial insemination – is an additional skill which has to be learned by dairy farmers. Traditional practices are also more oriented towards curative measures and less toward preventive measures. Consequently, dairy farmers seek veterinary service after diseases have already manifested and caused production decline. The poor health and reproductive management is indicated by high occurrence of sub-clinical and clinical mastitis, high calving interval (ranging from the best at 13 months to the worst of 18 even 24 months with an average of around 15 months), and high services per conception of 2.5 in average.

Similar to Figure 10-11, as dairy farming is regarded as sideline job dairy farmers do not possess particular intention to attain higher level of animal or farm productivity. As a result, dairy farmers restrict resource allocation for dairy farming to the minimum level. For example, cow shed is build arbitrarily without proper design; fodder is obtained from crop residues or low-quality, cut-and-carry green forages⁴⁰.

The practice of keeping ‘suckler cow’⁴¹ reduces further the already low farm productivity, because larger portion of the milk is fed to calves. A calf suckles two or three times or is fed with 2-5 l milk daily for a time period reaching to 12 – 16 weeks. As in general a dairy farm has 2-3 milking cows with low animal productivity of below 10 l/d/cow, the majority of dairy farms keeping ‘suckler cow’ produce only around 5 – 15 litres milk daily. Apart from this, keeping ‘suckler cow’ is also associated with the notion ‘Boyolali as service centre’ (*bengkel sapi*) for dairy cattle⁴². Less productive dairy cattle from other regions are relocated and sold with lower price to Boyolali. These cattle – which are less demanding in management requirements than milking cows – are then bought and reared by the dairy farmers. After the body condition is improved and/or the cattle are pregnant, they are sold again with higher price and relocated to other regions.

⁴⁰ At this point it is important to note that inappropriate milking, feeding, and herd management is also a consequence of limited resource use for dairy farming. This is further discussed in Figure 10-14.

⁴¹ Also in Figure 10-11

⁴² Cf. Moran (2008, p. 25)

Boyolali is perceived as one of the main sources of good heifers. If there are programs for sourcing heifers, people from West and East Java will come to Boyolali. They are pragmatic people and will buy pregnant heifers instead of rearing by themselves. Because the process of rearing calves takes a lot of time and resources, they usually sell their calves to Boyolali and buy them again when the heifers are pregnant and ready for milk production. Dairy farmers in Boyolali particularly do this rearing in dry season. (Exp 2)

The explanation above also presents the clarification why the Province of Central Java, in particular the District of Boyolali, has the lowest average animal productivity among the production centres, as it is concluded in Table 7-3 and further elaborated in Table 8-1 and Table 8-2. The large population number in Boyolali – the largest among dairy production centres – and the low production capacity is explained by, first, the application of inappropriate dairy management and limited resource allocation; and, second, the preference of dairy farmers for rearing dairy stock – be it calves from other cows or low performing dairy cattle – to milk production.

10.2.3.5 Intermediate outcome: Stagnation of dairy farm

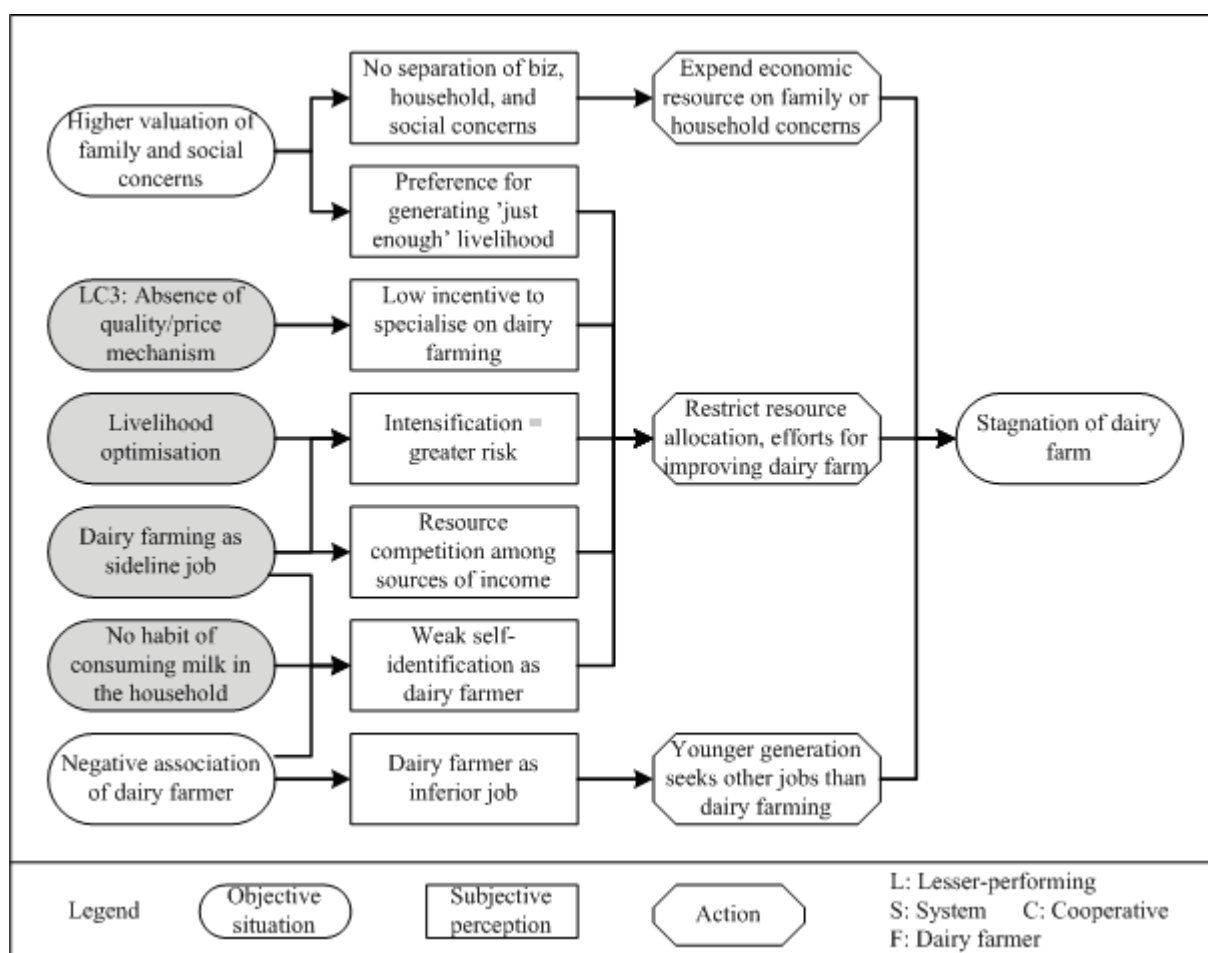


Figure 10-14 Intermediate outcome: stagnation of dairy farm

Source: own compilation

Embedded in a traditional system, dairy farmers have subsistence orientation that is closely associated with the higher valuation of family and social concerns above economic concerns. The higher valuation of family and social concerns signifies that individuals possess higher willingness to sacrifice economic resources for satisfying household or social needs. During interviews with the dairy farmers on the retrospective development of their dairy farm, it was identified that the decrease of cattle number was not only caused by adverse economic (e.g. price surge of concentrate feed) or climatic conditions (e.g. extended drought), but also by family and social concerns: dairy cows are sold to finance wedding reception, circumcision celebration, or to buy a new motorbike for the children of the family. Apart from being a family concern, celebrative events and ownership of certain goods are of social importance for the family, since it represents the social status and reflects the prosperity which in turn is important for social acknowledgement and prestige. However, viewing such action from business perspective, the expenditure of one or more dairy cows from the already small herd on family or social occasions can, first, hinder the accumulation of capital which is required for expanding the dairy farm; and, second, even undermine the dairy farm performance to the extent that its sustainability is at stake.

Compared to urban societies, rural societies in general are more reliant on well-maintained family and social relations for sustaining the livelihood. Also, they consider economic concerns less important than urban societies do. For example, individuals in urban areas have a higher tendency to allocate more time resource for working and more efforts to pursuit higher economic performance, thereby making their resources less available for family and social concerns. On the contrary, for individuals in rural areas the first and foremost objective of economic activities is to generate and secure sufficient livelihood for the household. Insofar as the individuals perceive that they have successfully achieved sufficient livelihood, they prefer to retain the already attained livelihood situation and to allocate the remaining resources for family and social needs. Consequently, although they may identify or be aware of opportunities to improve their business, their preference of generating ‘just enough’ livelihood prevents them from investing more resources - i.e. more money, time, or effort – to exploit the opportunities. Such preference seems to be more pronounced among older people:

There are indeed dairy farmers who never improve their farm. These are not always older farmers, but many of them are. When given advice, they typically response, “Well, I have been working this way all the time”. That means that they feel satisfied with what they have right now. (Exp 2)

Situated in a transaction condition where higher quality milk does not receive higher price (LC3), dairy farmers receive low external price-incentive to specialise on dairy farming. As they have other more preferential sources of income, dairy farmers are inclined to allocate resources just enough to sustain – but not sufficient to improve – the dairy farming on minimum level.

In traditional economy economic actors follow the strategy of livelihood optimisation, i.e. combining different sources of income to minimise risk, instead of specialising on and maximising a single source of income. Risk management seems to be one of the main concerns for smallholder dairy farmers. During discussions in training sessions with dairy farmers, it was identified that the current production intensity was not yet optimum: the marginal milk income from increased milk production was still higher than the marginal cost of additional concentrate feed. When asked about the reason why they left such available potential production capacity and thus income improvement unexploited; the main answer – apart from “that is what usual here” denoting the orientation toward common practices – was “it is too expensive”.

There is an important consideration behind such answer. The intensification of the feeding management, i.e. the working capital, would constantly drain more financial resource from their limited cash flow and thus has at least twofold consequences. First, it entails greater business risks, namely greater loss if the intended benefits do not accrue or an unexpected, negative incident happens to the dairy farm. Since traditional farmers are generally risk averse, the perceived risk tends to be higher than the objective risk. And if the perceived risk exceeds their threshold risk, then such option is considered as non-preferential undertaking for livelihood improvement. Second, the more resource used for the dairy farming, the less is available for other sources of income. Such option can undermine the performance of other sources of income. As long as there is any other source of income with higher priority or preference – e.g. on account of lower risk –, dairy farmers will unlikely opt for intensifying the dairy farm, in particular if the dairy farming is regarded as sideline job⁴³.

⁴³ Cf. Moran (2007, p. 7)

Another factor that causes the restricted resource allocation for improving dairy farm is the weak self-identification as dairy farmer which in turn is caused by the fact that dairy farming is treated as sideline job, that milk consumption is not an integral part of farmers' household, and that the profession as dairy farmer has a negative association. How someone identifies his/her own profession exerts influences on his/her own professional performance. If someone is convinced that he/she is doing the right and good things, believes that his/her work has values for himself/herself or the family or the society, enjoys doing the work, and is proud of what he/she is doing; there is a great motivation and incentive to achieve the highest performance and to improve continuously. The same also applies for the dairy farmers.

Either you like milk or you don't like milk. A dairy farmer must like his milk. He has to be a milk drinker and to be part of the milk himself. Because otherwise it does not make sense, you have to like and to be proud of what you are doing. You have to believe in it. So I think this is true: an industry will only have success if they believe in themselves. What they are doing has to do something with themselves. (Exp 4)

With weak self-identification, dairy farmers have thus weak internal motivation and incentive to make themselves successful dairy farmers. As a result, it is unlikely that dairy farmers make great efforts and invest more resources to expand the existing dairy farm.

Last but not least, the low participation of younger generation, which presumably have better educational background and higher motivation to improve, in dairy farming also contributes to the stagnation of dairy farm in general. As dairy farming involves strenuous physical works and "dirty" activities – in literal meaning – like cleaning dirty animal or scrapping manure in a place with pungent smell, younger generation considers it as an inferior job. Combined with other factors of diminishing farmland availability due to urbanisation and increasing opportunity cost of labour on account of improved education, younger generation prefers other professions to dairy farming. As a result, labour availability, particularly family labour, for dairy farming is continuously declining⁴⁴.

All in all, the selected actions described above lead to the stagnation of dairy farming. This is indicated by, inter alia, stagnating small herd-size, no improvement in milk equipment, and animal shed.

⁴⁴ Cf. Moran (2007, p. 7)

10.2.4 End outcome: Low and stagnating chain performance

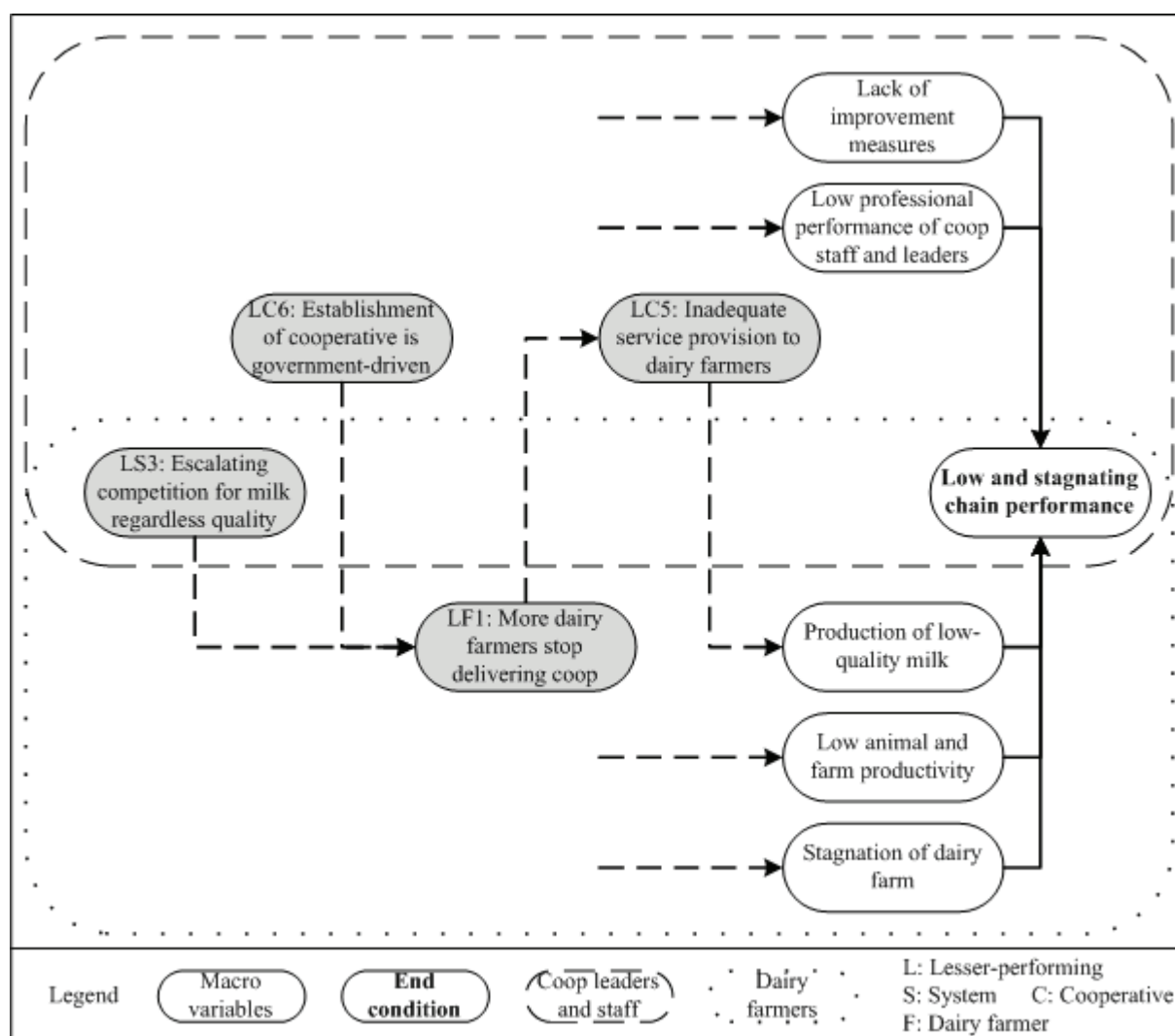


Figure 10-15 End outcome: Low and stagnating chain performance

Source: own compilation

As depicted by Figure 10-15, the combination of the intermediate outcomes, which resulted from diverse macro and micro variables as described in the previous sub-chapters, lead to the end condition. The intermediate outcomes of 'production of low-quality milk' and 'low animal and farm productivity' explain the low performance of the chain, whereas the 'stagnation of dairy farm', 'lack of improvement measures', and 'low professional performance of coop staff and leaders' explain the stagnating performance of the interaction system.

The logic of aggregation which establishes the causal relations between the selected actions and the respective outcome is already included in the explanation of each intermediate outcome. An intermediate outcome resulting from the selected action based on certain perception by dairy farmers can constitute a new situation for VUC, and vice versa. In this respect, both

dairy farmers and VUCs are mutually influencing in intensive interaction processes. Also, there are macro variables of the system which influence both the dairy farmers and VUCs. The interaction of these variables is exemplified by Figure 10-15: The ‘production of low-quality milk’ by dairy farmers was indirectly caused by, inter alia, their ignorance of GDFP and quality regulations as the cooperatives did not provide ‘adequate service provision, including extension service, to dairy farmers’ (LC5). The minimal provision of service to the members, however, was a necessary decision taken by VUCs since there was ‘increasing number of dairy farmers stops delivering coop’ (LF1) which brought VUCs into an adverse financial situation. That dairy farmers opted to sell their milk elsewhere was prompted by the situation of ‘escalating competition for milk regardless quality’ (LS3) where middle men offered higher milk price than VUC. Their option was also caused by the feeling of low ownership for the cooperative as the ‘cooperative establishment was government-driven’ (LC6).

10.2.5 Overview of the variables in the lesser-performing interaction system

Figure 10-16 provides the overview of the variables in the lesser-performing interaction system. Almost all macro and some important micro variables are listed here.

10.3 Higher-performing interaction systems

10.3.1 Macro variable: Institutional framework

10.3.1.1 Regulative aspect: Regulations for product and process quality

Within the interaction system between cooperatives and dairy farmers, quality regulations can be distinguished into two groups: product and process quality regulations. Product quality concerns the characteristics of milk delivered by dairy farmers to cooperative. These are, more or less, equivalent to the product-quality parameters defined by DPIs, namely milk grade or milk hygiene and milk composition or milk content. Therefore, in contrast to lesser-performing cooperatives which perform only basic tests of product quality (see Table 10-1); higher-performing cooperatives run additional tests to assess bacterial contamination (using MBRT or Resazurin Test⁴⁵) and TS content.

⁴⁵ MBRT and Resazurin Test cannot provide an accurate but rather approximate value of the degree of bacterial contamination, yet is simpler and cheaper. TPC test performed by DPIs, on the other hand, is able to provide a more accurate value, yet requires more sophisticated equipment and is much more expensive.

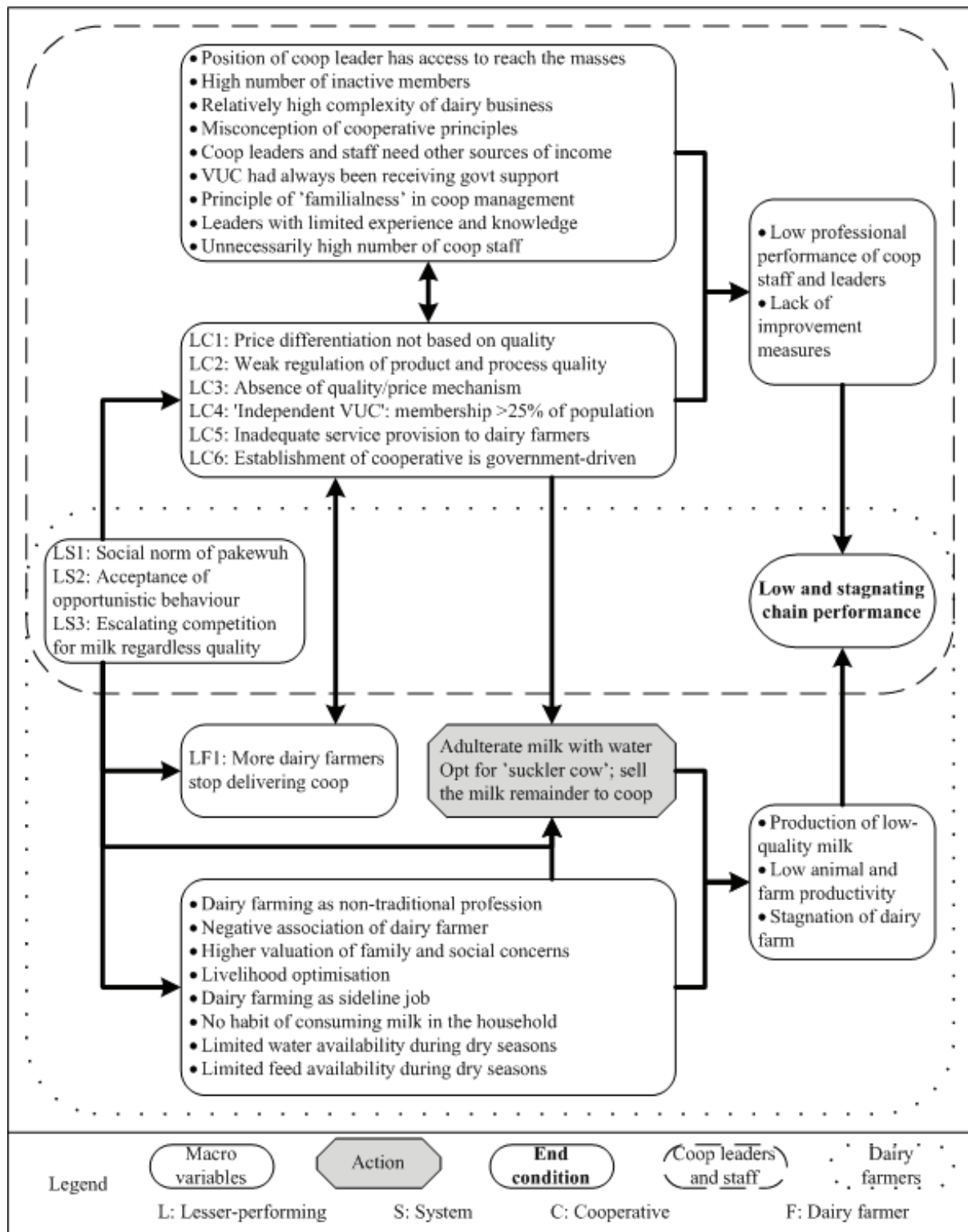


Figure 10-16 Overview of the variables in the lesser-performing interaction system

Source: own compilation

To assess the milk quality, cooperative takes two random samples, one from the morning and one from the afternoon delivery, in a time period of 5 to 10 days. The number of samples taken and time period are adjusted to the quality improvement progress and monitoring need.

For example, in the early phase of the introduction and enforcement of quality regulations, it was necessary to break the habitualised practices of milk adulteration by the most dairy farmers. Therefore, milk test was conducted in shorter time period of every 5 or even 3 days with 2 to 4 random samples. The samples are then tested in the cooperative laboratory and based on their results the price is determined.

Such quality/price mechanism is the backbone for the enforcement of the product quality regulation since it is the one which provides both positive (price bonus) and negative incentive (price penalty) for dairy farmers. The farm-gate milk price is basically composed of the base price which is determined by the milk grade and the bonus or penalty which is determined by the TS and fat content. Sometimes temporary price bonuses are also given according to the prevailing circumstances, e.g. extended dry period or increased fuel price. By establishing a mechanism of price determination based on milk quality, the cooperatives pass on the quality/price signal from DPIs backward the chain to dairy farmers.

In the higher-performing interaction system two distinct price determination systems were observed, i.e. individual price and group price. Cooperatives currently applying individual price also used group price during the establishment process of the quality/price mechanism. Generally, price differentiation was started from larger to smaller groups: from large group of several MCCs, to one MCC, to several large groups, to many smaller groups, to individual dairy farmers.

Dairy farmers can choose how they would like to have their milk price paid. The farmer we have just visited chose the group pricing. [Which one is more advantageous for dairy farmers, the individual or group pricing?] It depends. If the group is solid and good, the advantages gained by the improvement made by one member will benefit the other members. So, it encourages farmers to improve their practices. New, improved, or innovative practices will be disseminated more easily in a group, as we conduct training and monitoring in groups. But on the contrary, if one member of the group cheats or behave not appropriately, then all members of the groups will suffer from price penalty. So, there is a kind of social pressure where group member do the monitoring among themselves, and thus less monitoring from cooperative side. (Coop 3, higher performance)

Monitoring in groups is possible since the group size was small and manageable consisting of 8 to 10 members. By maintaining the group small, intensive interaction – which is a prerequisite for the internal group control – between members is enabled.

The process quality regulations – also frequently termed ‘Standard Operating Procedures’ (SOPs) – include rules pertaining to good dairy farming practices (GDFP)⁴⁶, such as milking hygiene and post-harvest milk handling by dairy farmer, and milk handling by cooperative staff responsible for MCC and milk transportation. In these regard, SOPs are oriented toward improving the quality of processes undergone by the milk. Additionally, SOPs are also dealing with practices indirectly related to milk hygiene, such as technical recommendation for animal shed design, feeding management, and animal health management.

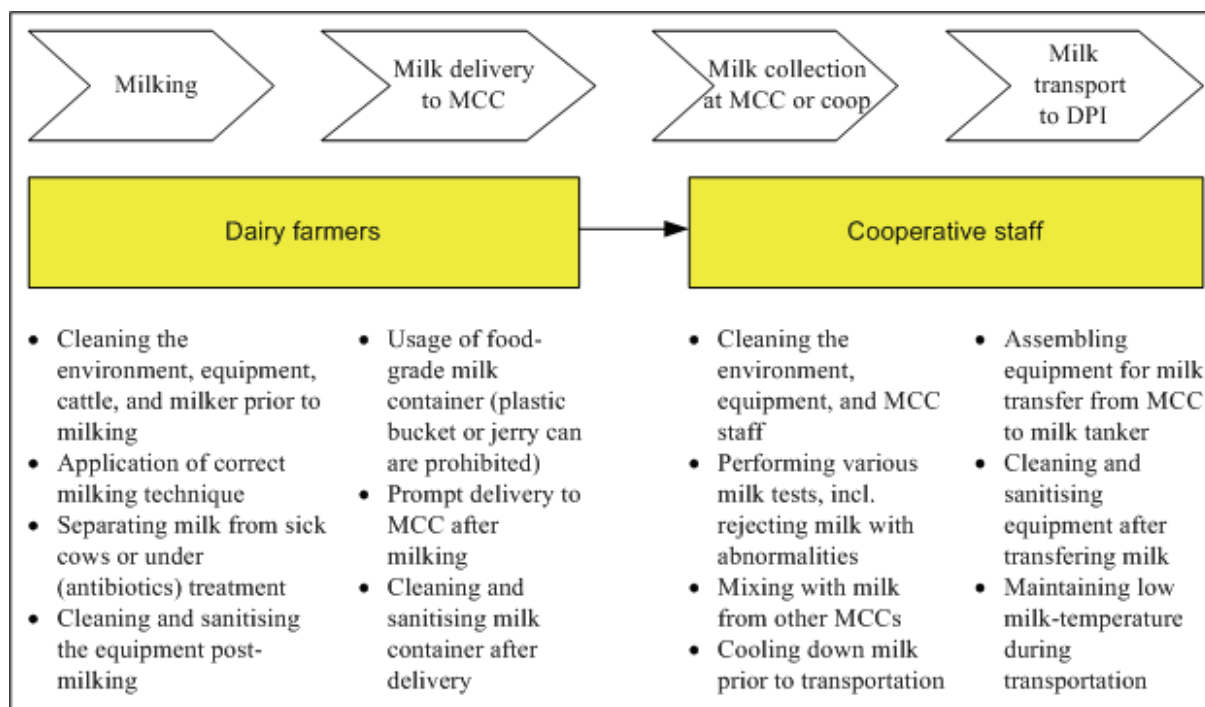


Figure 10-17 Interdependent activities influencing the milk hygiene

Source: own compilation

Figure 10-17 lists some main activities or processes influencing the milk hygiene. As depicted in the figure, milk hygiene is determined by a chain of activities performed by various operators. Given the fact that milk is highly perishable on account of the exponential growth of bacteria (see Table 10-2), improving and maintaining milk hygiene is thus a complex process and requires well-concerted activities between dairy farmers and cooperative staff. The improvement of dairy practices by the dairy farmers (also its maintenance), if not followed-up

⁴⁶ IDF/FAO (2004) provides a brief guideline to good dairy farming practice (GDFP).

by the improvement of milk handling by cooperative staff, will not achieve the expected outcome; and also vice versa.

Table 10-2 Factors influencing the growth of bacteria contaminating milk

Factor	Description
Food	Milk contains nutrient required for bacteria growth; milk rests on utensils not cleaned properly are ideal growth medium for bacteria.
Temperature (warmth)	Despite specific optimal temperature for each species, bacteria grow well within the range of 20-40°C – average temperatures in the tropics.
Water (moisture)	Apart from milk rests, water rests on utensils not-properly dried facilitate bacterial growth.
Time	Supplied with food, water, and a temperature of 37°C; the reproduction of bacteria follows a geometrical progression. One bacterium will grow over time to: 1 hour → 8 4 hours → 4 thousand 6 hours → 262 thousand 8 hours → 6.7 million 10 hours → 1 billion

Source: adapted from Moran (2007, p. 31)

The concept of SOPs is usually introduced by the DPIs to their supplier cooperatives, which in turn pass the information on to their staff and members. After the introduction and first application of the SOPs, higher-performing cooperatives have more influence in designing the revision of the SOPs. Technical requirements that are hard to achieve by the dairy farmers due to, inter alia, infrastructure restrictions⁴⁷ are discussed and the reported as feedback to the DPIs. Then, the SOPs are adjusted first to achievable standards, yet gradually elevated unto reaching higher process quality. Such transmission of information is more effective in inducing changes along the value chain, because it involves an information-feedback mechanism or a bidirectional information transmission which allows step-by-step improvement and its continuous monitoring.

Similar to the price bonus/penalty for the enforcement of product quality regulations, the enforcement of SOPs is backed-up by a reward and sanction system to empower good practices as well as to deter bad practices. Dairy farmers in compliance with the SOPs can retain their membership in the cooperative and are thus entitled to the collective services provided, in particular loan service both for working capital or personal consumption. On the contrary,

⁴⁷ See Sub-chapter 9.3.1 for financial assistance given to improve infrastructure and equipment.

incompliant practices shall receive penalty with gradual severity: first verbal and formal warnings, then rejection of milk delivery; and, if no correction is made although technical assistance is already given, as final penalty the dairy farmer will be dismissed from the cooperative.

10.3.1.2 Normative aspect: Social pressure backing-up regulative aspect

In the case of group pricing, the regulative pillar – i.e. the written, formal price determination system – is backed-up by the normative pillar of social pressure among the group members. In group pricing, the action of each group member brings consequences to other members, be it negative or positive.

If the group is solid and good, the advantages gained by the improvement made by one member will benefit the other members. [...] But on the contrary, if one member of the group cheats or behave not appropriately, then all members of the groups will suffer from price penalty. So, there is a kind of social pressure where group member do the monitoring among themselves, and thus less monitoring from cooperative side. (Coop 3, higher performance)

A basic necessity of functioning group pressure is the high degree of trust among dairy farmers in the group. Trust, in turn, requires high degree of familiarity and thus is stronger in groups which are established based on the initiative of the members and whose members are selected by the members themselves. Apart from this, geographical proximity and intensive interaction among members are also a prerequisite for effective mutual-control as well as diffusion of information among the members. Hence, group pricing is only possible in small groups.

Ideally a group should have a maximum of 8 dairy farmers so that the training and monitoring activities can run intensively. Also, social control is more effective in smaller groups. Currently there are 650 groups of dairy farmers. Dairy farmers in one group receive the same milk price. (Coop 1, higher performance)

Additional to the social pressures in dairy-farmer groups, a social role⁴⁸ of good dairy farmer was also cultivated by the cooperative. Socialisations were run to give understanding to the wider community that dairy farmers have the function of producing milk which is used as raw material for producing dairy products designated for human consumption, so that the quality generated by dairy farmers will affect the consumer of the dairy products. Moreover, the co-

⁴⁸ See Sub-chapter 3.5.2 for the definition of social role.

operatives encouraged the community to consume fresh milk produced by dairy farmers. Also, one of the higher-performing cooperatives produces yoghurt for local market in order to introduce milk consumption particularly for children.

10.3.1.3 Cultural-cognitive aspect: Communication, culture, and social structure

Training or extension system was one of the most important pillars in the establishment of effective quality regulation system, because there was a wide gap between the actual dairy practices and those required by the quality regulations. In essence, the ultimate goal of the extension service was the sustainable adoption of GDFP by the dairy farmers. This necessitates, of course, that the information on GDFP is effectively communicated to the dairy farmers – communication is a central issue in extension service. However, communication is more than just providing understandable information; it covers a sequence of important aspects in a process, as stated by an expert on communication and training method:

In the context of communication or training it is frequently assumed that when the information is successfully imparted, then the task is already finished. But it is not that simple. If something is said, then it is not always listened to. If it is listened to, then it is not always understood. If it is understood, then it is not always agreed to. If it is agreed to, then it is not always done. If it is done, then it is not always applied sustainably. Between imparting an information and sustainable change of behaviour there are in-between stages to be considered. (Exp 8)

The statement above implies that inducing sustainable behaviour changes is more than just a matter of enabling the dairy farmers to cognitively comprehend the content of GDFP. It requires that, first, the information reaches the dairy farmers and that they have interest in, attention to, and perceive the significance of the information. Then, they should be able to absorb, digest, and retain the information. If they agree and accept that the information is useful, beneficial, or valuable; then they will once try to apply the information. Last but not least, upon reflection about the costs and benefits of the application, they will decide whether to sustainably adopt or to abandon it.

Considering these important aspects of effective training, the dissemination of GDFP in the higher-performing interaction system is analysed (see Figure 10-18). During the initial stage of the introduction of quality regulation, higher-performing cooperatives experienced constraints in disseminating GDFP. Similar to the lesser-performing system, the objective situations of ‘dairy farming as non-traditional profession’, ‘no habit of consuming milk in the

household’, and ‘dairy farming as sideline job’⁴⁹ hampered the abandonment of inappropriate practices such as handling cow and milk with low hygiene standard.

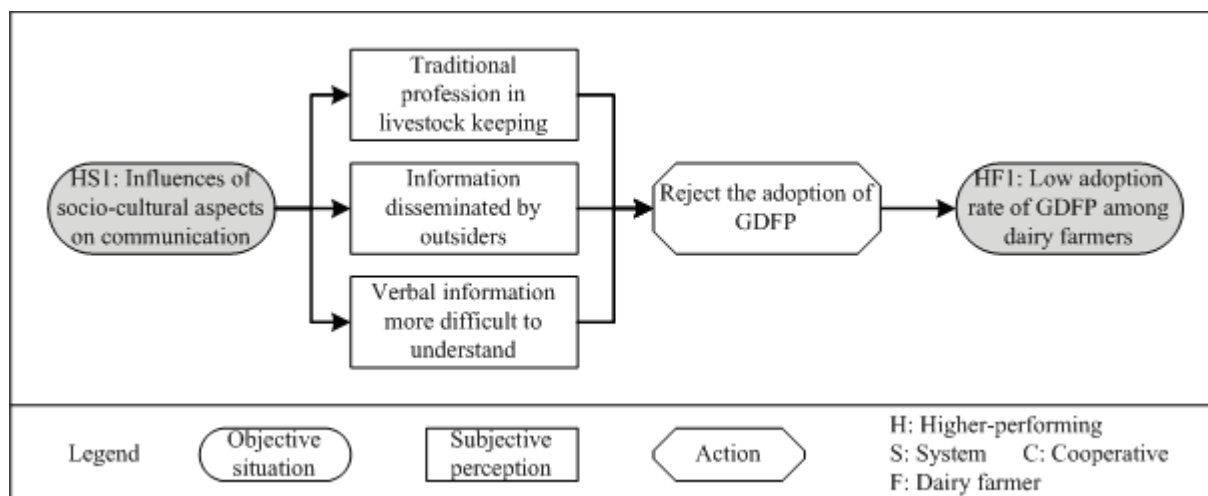


Figure 10-18 Intermediate outcome: Ineffective dissemination of GDGP among farmers

Source: own compilation

On top of that, there was a unique problem of cross-cultural communication issue. In rural areas where different ethnic groups live in somewhat separated and homogenous groups, cross-cultural communication and interaction may prove difficult. Each culture group has different ways of communicating. While one culture group is more open to information from outsiders, the other may not be so. While in one culture group the advice of social leaders are sought after, listened to, and followed (more hierarchical); in other culture group social leaders may not exert such function (more egalitarian). In this respect, communication is influenced by the prevailing socio-cultural conditions of the community (**HS1**). A problem of cross-cultural communication was the case in the higher-performing interaction system in East Java. While the board of management and cooperative staff is mostly of Javanese ethnic group, the dairy farmers in several areas are of Madurese ethnic group.

We had experienced difficulties in improving milk quality through training and monitoring in areas where dairy farmers are predominantly of Madurese ethnic group. They were unwilling to accept recommendations for improving dairying practices, because they feel that they are already well-experienced and know very well about dairy farming, since they have inherited this profession [livestock keeping] over generations. (Coop 2, higher performance)

⁴⁹ See Figure 10-10 and Figure 10-11.

As depicted by Figure 10-18, the resistance against the adoption of new practices was partially grounded in the historical occupation of Madurese people. Traditionally Madurese are not staple-crop farmer, since their place of origin – the Madura Island – has barren and non-arable lands. Thus, one of their primary means of sustaining livelihood has been – apart from coastal fishery, tobacco, and salt production – traditional livestock keeping which in some aspects is fundamentally different from GDFP. Having long-standing experience in livestock keeping, the dairy farmers were not interested and willing to pay attention to the dissemination of GDFP, because they perceived such information as redundant. Additionally, as the socialisation was conducted by extension workers which were ‘outsiders’, i.e. persons who did not live in the community and thus were unfamiliar to the dairy farmers, they perceived that the information had no particular importance and relevance for them and thus was not listened to. Similar situation was described by an agriculture expert who provided extension services for many years to Madurese tobacco farmers.

Among many places producing tobacco, those places where Madurese farmers predominate are more challenging. When my staff was giving technical advice, they were not listened to. So, I had to go there by myself. But instead of directly talking with the tobacco farmers, I talked with the Hajji⁵⁰ in the village and asked him to invite other village people to come to his place. I was dressed-up in sarong⁵¹, traditional Muslim clothing, and wore a kopiah⁵² – I myself am a Hajji. After we had a prayer together and some conversation took place, the Hajji introduced me to the invitees and explained the purpose of my visit. Then, I began speaking about the real content. Only using this way they will listen. (Exp 3)

The short testimony above signifies that the message bearer did not present himself as an anonymous outsider with no emotional bond to the community, but instead as a respectable and identifiable person – a Hajji. Moreover, the self-presentation was legitimised and empowered by the social leader who owned the trust of the community, so that the information he brought gained attention and acceptance. It seems that for Madurese community the ‘who’ and ‘how’ of the communication process was of higher importance.

⁵⁰ ‘Hajji’ is an honorific title bestowed upon a person who has completed the pilgrimage or Hajj to Mecca as the fulfillment of the fifth pillar of Islam.

⁵¹ ‘Sarong’ is a long piece of thin cloth with patterns or batik which is worn wrapped around the waist and hanging down slightly above the ankle. It is usually used by Muslim men in Indonesia when they are praying.

⁵² ‘Kopiah’ or ‘kipphah’ is a thin skullcap worn by Muslim men particularly in rural areas of Indonesia.

Another more general problem identified with the extension system was the conventional method of verbal communication. Dairy farmers experienced difficulties to comprehend the information on GDFP which was presented using verbal method solely.

Changing habitualised, inappropriate dairy practices is not an easy task. We cannot expect that they will change by telling them what is right and how to do things correctly. Dairy farmers are modest people with relatively low educational background. They cannot understand abstract theories or principles in dairy farming. What they need is something real, practicable, and can be observed concretely. (Coop 3, higher performance)

Having the subjective perception as described above, the dairy farmers then rejected the adoption of GDPF. As a result, the adoption rate of GDFP among dairy farmers was low irrespective of the extension service provided by the cooperatives (HF1).

10.3.2 Micro variable: Cooperative leaders and staff

10.3.2.1 Intermediate outcome: Improved service provision for members

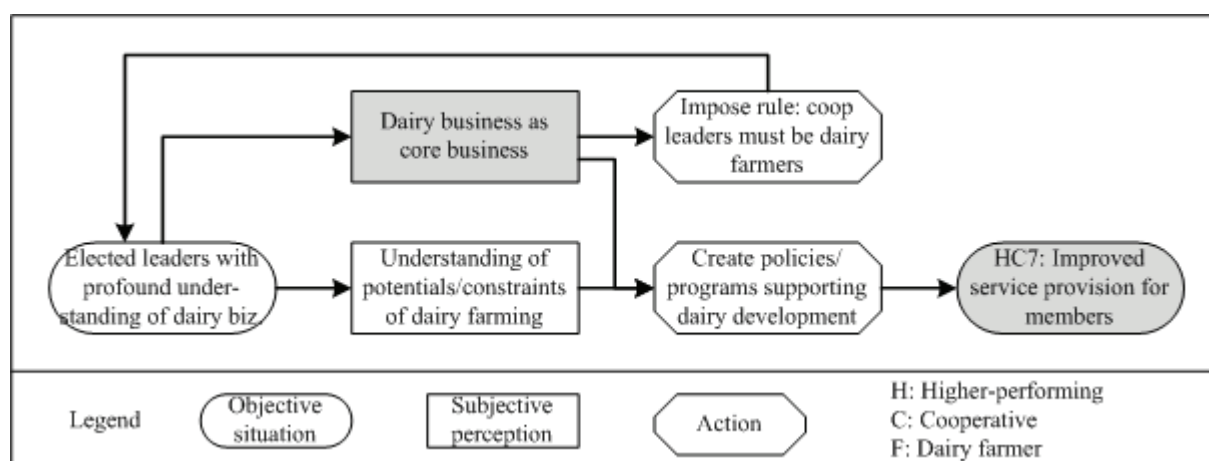


Figure 10-19 Intermediate outcome: Improved service provision for members

Source: own compilation

All coop leaders from higher-performing cooperatives hold the opinion that a cooperative should focus on one core business – in this case the dairy business – in order to succeed. Focusing on one core business, cooperative has a specific vision and orientation for its future development. Such opinion was even supported by a cooperative leader of lesser-performing cooperatives.

In its historical development our cooperative was first established as a dairy cooperative, but then it was changed into Village Unit Cooperative (VUC) in 1978 since we wanted to broaden the spectrum of services for the members. However, with such organisational format the performance of the dairy business had been declining because the cooperative could not concen-

trate on the development of dairy farming. Hence, in 1996 the cooperative was changed again into a dairy cooperative. (Coop 3, higher performance)

Our cooperative was established in 1971 and it was founded by 35 dairy farmers. The number of dairy-farmer members has been increasing ever since. From the beginning our cooperative has always been focusing on dairy production. (Coop 1, higher performance)

In East Java the cooperatives are quite new like in Ngantang, Grati, and Semen. These can evolve very well. Why is this so? Because they have only one core business, namely the dairy production. Therefore, their members are only dairy farmers who depend exclusively on dairy farming. So their life [cooperative and members] is determined by the outcome of their dairy business. (Coop 4, lesser performance)

Based on this perception coop leaders advocated a modification in the cooperative's basic and operational statute requiring officially that coop leaders⁵³ must be a dairy farmer, additional to the regular requirements like good leadership and management skill. Through such mechanism it is guaranteed that the elected coop leaders or employed operational manager possess profound understanding of and experience in the dairy business and – to some extent – also have personal interest in the further development of the dairy business. These, in turn, also support the perpetuation of dairy business as the core business of the cooperative. Such mechanism presents an organisational solution to assure that the cooperative management sustainably supports dairy business

As the elected leaders have longstanding experiences in dairy farming, they have solid understanding of the potentials that can be tapped to improve farm productivity and of the constraints that hamper dairy farm development. Viewing the dairy business as the highest priority in cooperative management, coop leaders thus create policies and programs to facilitate the business development of their members. More specifically such policies and programs are:

- i. **Production of fresh forage:** Because the availability of land for growing green forages is strictly limited, cooperatives engaged in cooperation with the local government agency of forestry service because this agency has vast areas of forest on which green forages can be produced.

⁵³ The term 'cooperative leaders' used throughout this dissertation refers to the members of the cooperative's board of directors – i.e. (vice) directors, secretary, and treasurer – and, if applicable, the operational manager for the dairy business.

- ii. **Production of concentrate feed:** Through collective purchase and distribution organised by the cooperative, the production and distribution cost of concentrate feed can be substantially reduced. Also, the quality of the concentrate feed can be monitored and guaranteed. This is an important aspect as the sustaining and increasing of dairy cattle productivity – which is heavily determined by the feed quality – is in the interest of the dairy farmers and cooperative.
- iii. **Collective provision of water:** Similar to the lesser-performing cooperatives, some areas of the higher-performing cooperatives are affected severely by the problem of limited water availability during dry seasons. To tackle this problem the higher-performing cooperatives built long-distance water pipelines to MCCs and decentralised small water reservoirs from which dairy farmers can collect additional water for their farm. The establishment of such system was in fact costly, but adequate water availability was indispensable for any quality improvement measure. Hence, it was considered as an investment rather than cost.
- iv. **Extension service:** To improve milk quality and productivity the cooperatives established their own extension system⁵⁴.
- v. **Veterinary service:** The cooperatives employ their own (para-) veterinarians to provide services such as artificial insemination (AI)⁵⁵, pregnancy control, and health check. Since these services are, again, exert strong influences on the animal productivity, their provision is organised by the cooperatives to ensure the availability and quality.

Having the dairy production as core business does not mean, however, that the cooperatives do not have other types of business. Higher-performing cooperatives also provide daily consumer goods and loan services both for consumptive purposes or purchasing dairy cattle. But these services are complementary activities and not designated to yield profit. For example, in one higher-performing cooperative the loan service is provided without any interest, yet the amount and requirements are determined by the member performance; whereas the repayment

⁵⁴ See Sub-chapter 10.3.2.2 and 10.3.2.5 for further elaboration on the extension system.

⁵⁵ The arrangement for AI service differs among the higher performing cooperatives. In one cooperative AI is provided without any additional cost because the cost is already covered in the milk price deduction of 400 IDR per litre (2006); whereas in other cooperatives dairy farmers pay for the service without any subsidy (40,000 IDR per AI service in 2006), yet they receive “pregnancy guarantee”: if the animal does not become pregnant, the AI is repeated up to 3 times.

is deducted from the milk payment. With the implementation of policies and programs oriented toward dairy development and member needs the provision of services to the members is significantly improved (HC7)

10.3.2.2 Intermediate outcome: Effective imposition of quality regulations

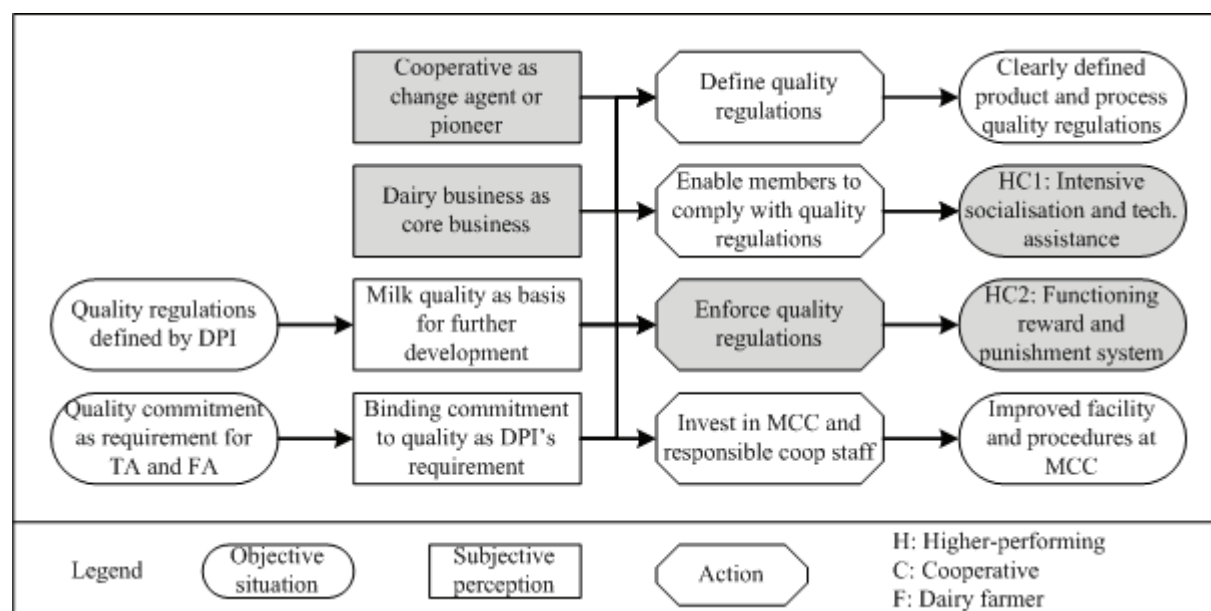


Figure 10-20: Intermediate outcome: Effective imposition of quality regulations

Source: own compilation

An extremely interesting conclusion drawn from the interviews with the cooperative leaders of the higher-performing cooperatives is their unequivocal conviction that the key factor of their cooperative development is the strong commitment of the cooperative leaders to initiate reform starting with the cooperative itself. Establishing a professional management was always stated as the first step in the development of dairy cooperative. Therefore, the reform of the cooperative in many aspects was the main priority in advancing the performance.

The role of the board of directors is influential in cooperative development. In a period where the board of directors was once led by “outsiders“, the cooperative performance decreased due to many problems. These people do not understand the ins and outs of dairy farming and dairy business because they themselves are not dairy farmer. But they have high social status and exert strong social influence in the society. Leaders function as a head that determines which direction the cooperative is walking to. (Coop 2, higher performance)

Actually, if the board of directors has a strong commitment for the cooperative and members, I think there is no reason that the cooperative cannot develop. The problem is whether the board of directors has such commitment. [...] Cooperative is like a "container" for its members. We cannot improve the "content" if the "container" itself is defect. Therefore, the starting point is the cooperative itself. Professional management of the cooperative is the main driving power for improvements. (Coop 3, higher performance)

Our cooperative was established in 1971 and [...] had been declining and reached its nadir in 1998 because of increasing default loans and weak management. The pivoting point was in 2001 when we introduced reform in the cooperative. The basic and operational statutes were revised. A strategic planning for 2001-2005 was devised, in which the new vision, mission, and value are defined. (Coop 1, higher performance)

The subjective perception of cooperative as change agent or pioneer encouraged the initiation of progressive changes in the cooperative regarding the introduction and establishment of quality regulations. Additionally, since the dairy business is perceived as the core business, it receives higher priority in policy-making and larger resource allocation.

Against the background of the quality regulations, including the quality/price mechanism, defined by DPIs, cooperative leaders perceived that further development of the cooperative's dairy business can only be built on the production of higher-quality milk. While the expansion of production capacity is somewhat restricted due to, inter alia, the limitation of land availability, the improvement of milk quality provides great potential of increasing milk revenue. For example, based on Table 9-3 the improvement of milk grade from grade 6 to 1 in 2006 would result in over than 60% increase in milk revenue; in addition price bonuses were provided for higher fat and protein or SNF content.

The orientation toward producing higher-quality milk was also reinforced by the objective situation that DPIs offer both technical (TA) and financial assistance (FA) only for those suppliers committed to strive for delivering higher-quality milk. While the assistances by DPIs are extremely valuable for improving their system, cooperatives are bound to work on and yield success in quality improvement measures in order to be entitled to receive further assistances.

The combination of the internal values and subjective orientations which are shaped by the objective situations led cooperative leaders to take necessary actions to effectively impose the quality regulations in the interaction system. Such endeavour entails at least three different aspects of action: defining regulations, enabling dairy farmers to comply with the regulations, and enforcing the reward and punishment system.

The cooperatives defined the quality regulations in accordance with the requirements delineated by DPIs. As in general DPI's requirements cannot be met in short term, the regulations were conceived in gradual requirement levels progressing toward DPI's requirements. Specifications were drawn up on milk quality parameters – including the pricing mechanism – and on processes directly influencing the quality of milk hygiene. Guiding principles were ex-

pressed in simple terms – “*ABC (aman bersih cepat) dan tanpa antibiotika*” which means “safe to consume, clean handling, fast delivery, and without antibiotics”. As a result, there are clearly stated specifications of quality standards which cooperative staff and dairy members should adhere to⁵⁶.

To enable dairy farmers to comply with the regulations, the cooperatives established their own training system. In contrast to the lesser-performing cooperatives which attempt to externalise or training and monitoring functions to or depend on local government, the higher-performing cooperatives viewed this as the main responsibility and interest of the cooperative itself. Training and monitoring is given precedence within the cooperative reform processes:

During the early introduction and enforcement of GDFP we aimed at the improvement of milk hygiene. Our cooperative established ‘quality team’. Four quality teams with each three extension workers were established to socialise and give training about the SOPs, for example, in cleaning milking equipment, cattle management, and milking practices. Of utmost importance in the whole process was the consequent enforcement of the principle ‘reward and punishment’. At present, most dairy farmers already follow the SOPs and the monitoring system is established. That is why the extension team is now reduced to 6 persons. They deal mainly with problem farmers. (Coop 1, higher performance)

We pay a special attention to training and monitoring. It is a part of our routine programme and also included in the cooperative basic statute. (Coop 3, higher performance)

Training and monitoring is cooperative's responsibility, not other's [e.g. local government], because the improvement and maintenance of milk quality is the main business interest of the cooperative. (Coop 2, higher performance)

Extension workers and (para-) veterinarian are employed by the cooperative to socialise the new regulations, visit farmer groups, encourage dairy farmers to improve their practices, convince them of the benefits of the improved practices, and give technical advice and solutions for the constraints faced by them. Given the fact that there had been a wide gap between the actual dairy practices and the ideal practices required by the quality regulations, the cooperatives had to design a training system that is able effectively both to impart the knowledge of GDFP and to initiate sustainable changes of behaviour among dairy farmers. To ensure the effectiveness of the training system, the cooperatives applied specific training strategy – in addition to the regular socialisation through training and visit extension system – to induce behavioural changes among dairy farmers by incorporating and utilising socio-cultural aspects

⁵⁶ See Sub-chapter 10.3.1.1 for the regulations of product and process quality.

of the society⁵⁷. Hence, in the interaction system the socialisation of the regulations and, more importantly, the technical assistance is delivered intensively (**HC1**).

To enforce the product quality regulation the cooperatives established their own laboratory for testing the milk delivered by the dairy farmers. For the monitoring of process quality the extension workers conduct regular observation of practices each time they visit farmer groups as well as occasional random inspection at individual dairy farm or MCC, sometimes together with the field officers from DPIs, to prevent deviant practices. One higher-performing cooperative also provides incentive for group leaders if they succeed in encouraging their groups to improve milk quality or productivity. In such condition, group leaders are actively involved and have stronger interest in the monitoring of quality regulations. With such measures, the functioning of the reward and punishment system is guaranteed (**HC2**).

The effective implementation of quality regulations also necessitates improvement on cooperative side. The cooperatives invested in the improvement of the infrastructure for MCCs based on the technical requirements delineated by DPIs: closed building, floor type and site plan suitable for cleaning, good ventilation and lighting, hot water and detergent for cleaning milk cans, and so forth. Also, any equipment in immediate contact with milk, e.g. milk bucket, filters, milk tank, was upgraded to food grade material (stainless steel). The pipe system was rebuilt to enable thorough cleaning using CIP (Cleaning-In-Place) system or detachable system which allows the dismantling into separate parts for sanitising after each use. To inhibit bacterial growth many MCCs of higher-performing cooperatives were equipped with cooling plant. Milk transporters were upgraded with cooling capacity. Capacity building was given for cooperative staff working in the MCCs as they have to comply with the SOPs. The staff is also subject to meticulous monitoring by the cooperative and DPIs. With such investments the facility and procedures for collecting, storing, cooling-down, and transportation of milk are significantly improved. These successful improvements, however, were also on account of DPIs' massive supports for their committed suppliers (see Sub-chapter 9.3).

10.3.2.3 Intermediate outcome: Enhanced organisational and cost efficiency

⁵⁷ See Sub-chapter 10.3.2.5 for socio-culturally adjusted training and monitoring

The strong conviction of the coop leaders that reform measures must start from the cooperative management prompted them, inter alia, to take actions to reduce the large number of inactive members, since inactive member create additional burdens, i.e. the annual surplus distribution⁵⁸. To tackle the existing problem of inactive members the cooperatives conducted member re-registration. One family business is entitled only to one membership in the cooperative. Inactive members were given the options either to become active again in dairy business or to leave the cooperative. Additionally, the existing members were given short introduction into cooperative principles. To avoid future problem of inactive members, one of the higher-performing cooperatives established a new regulation for member admission.

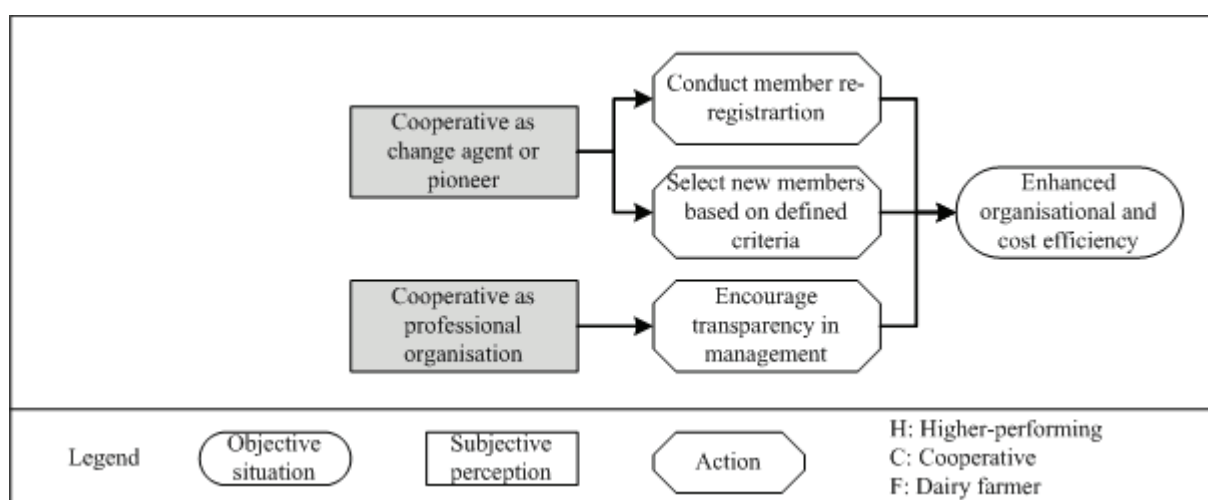


Figure 10-21 Intermediate outcome: Enhanced organisational and cost efficiency

Source: own compilation

Applicant for cooperative membership should first attend a 3-day class to get an introduction about the basic understanding and principles of cooperative. Then field verification will be conducted and the applicant will be monitored for 2 years. Only after that it will be decided whether the applicant is accepted or not. Through this, we can reduce the incidence of inactive members and avoid unnecessary burden for other members. (Coop 1, higher performance)

Coop leaders of higher-performing cooperatives also advocate the idea that the transformation from traditional to professional cooperative management is one of the key solutions for the declining performance in the dairy business. This required the establishment of transparency and accountability to create open communication between the cooperative management and

⁵⁸ See Sub-chapter 10.2.2.3 for the relation between inactive members and additional burdens for cooperative.

dairy farmers as member. Also, by encouraging transparency the propensity for corruption can be reduced.

We try to cultivate honesty and transparency in the cooperative management. Therefore, each semester we commission a public accountant to perform external financial audit. (Coop 2, higher performance)

The measures to reduce inactive member and encourage transparency in the cooperative management have resulted in the enhancement of organisational and cost efficiency. Consequently, more financial resources can be saved and thus are made available for other purposes. This is in fact an important factor for the endeavour to upgrade the performance of the system, since every upgrading activity needs to be backed up by adequate resources.

10.3.2.4 Intermediate outcome: Higher professional performance of leaders and staff

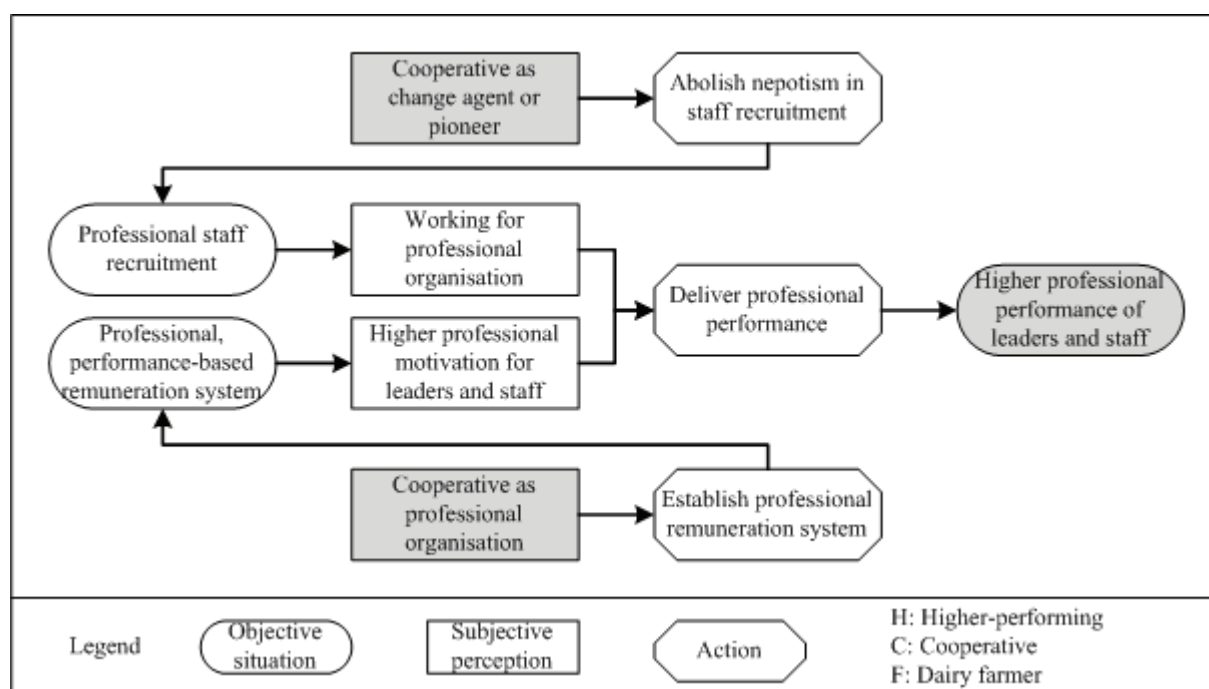


Figure 10-22 Intermediate outcome: Higher professional performance of leaders and staff

Source: own compilation

One aspect to be reformed in the cooperative is the nepotism practices in staff recruitment, or in business transactions, as it has rather been a general problem in Indonesian cooperatives⁵⁹.

⁵⁹ See Sub-chapter 10.2.2.2 for the problem of nepotism in cooperative

The members of the board of directors, supervisors, and cooperative staff are prohibited from doing nepotism. (Coop 1, higher performance)

By formally prohibiting nepotism in the operational statute, higher-performing cooperatives embraced a more professional human resource management which applies regular recruitment process based on competitive application and formal criteria like academic background, skills, and work experience. Moreover, one of the higher-performing cooperatives also emphasised that to increase the organisational dynamism and innovation the cooperative offered employment in particular for young professionals. As a result, the individuals – with better qualifications and competences – employed by the cooperative perceive their work in the cooperative as professional occupation with career prospect, rather than as 'mutual help among family members' (cf. Sub-chapter 10.2.2.2). This, combined with the professional remuneration system, provides stronger motivation to deliver higher professional performance.

The vision to transform cooperative into a professional organisation was translated into, inter alia, establishing professional remuneration system for cooperative management, i.e. board of directors and staff.

If coop leaders are required to work professionally and concentrate their efforts on developing the cooperative, then they should also receive professional payment. Otherwise is not possible. (Coop 3, higher performance)

The remuneration system also entails a performance-based salary system. Cooperative staff receives a basic salary plus bonuses depending on the achieved performance. For example, the extension workers receive a basic salary of 400,000 IDR (in 2006) plus the bonus of incremental gains in the quantity and quality (germ and TS content) of milk produced by the farmer groups they assist. Similar condition also applies for the board of directors. Hence, situated in such system coop leaders and staff have higher motivation to excel in their job, thereby continuously improving their professional performance.

10.3.2.5 Intermediate outcome: Socio-culturally adjusted training and monitoring

The training system which was intended to enable dairy farmers to meet the requirements of quality regulations was one of the most important pillars in the establishment of effective regulative system. This, however, was not without problem, since certain socio-cultural factors hampered the dissemination of GDFP, thereby resulting in low adoption rate among dairy

farmers (**HF1**)⁶⁰. Facing such situation, coop leaders and staff attempted to specify the constraints and to find effective solutions – in fact, their commitment, eagerness, and ability to identify and tackle the problem was an indicator of their higher professional performance. As the problem was caused by socio-cultural factors, cooperative leaders perceived that socio-cultural aspects should be seriously considered and addressed in the training and monitoring system.

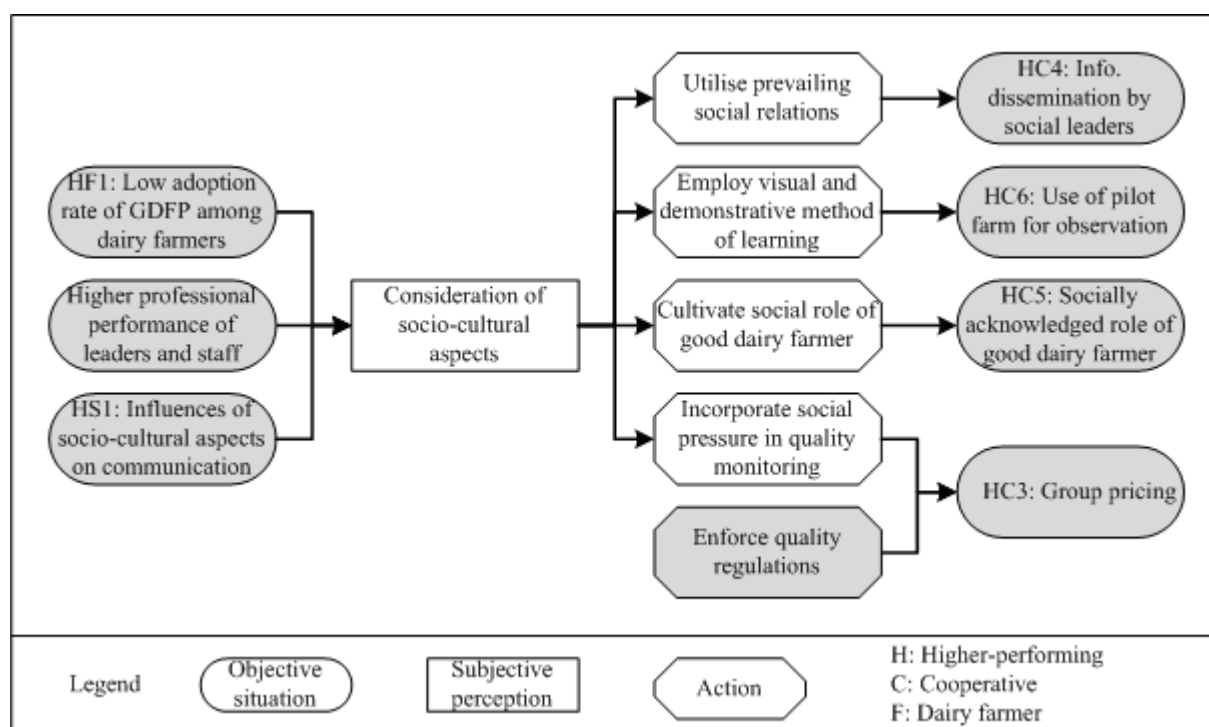


Figure 10-23 Intermediate outcome: Socio-culturally adjusted training and monitoring

Source: own compilation

The first adjustment for the training system is the utilisation of the prevailing social relations in the community in imparting information about GDFP.

We follow a specific strategy in delivering training and extension services. We focus the training and extension first on individuals with high social status in the society, like the village heads, administrators of the village structure, and community leaders; including their family members who are involved in the dairying business. [...] After their dairy practices and business are improved, other dairy farmers in the society will follow these good examples. (Coop 3, higher performance)

⁶⁰ See Sub-chapter 10.3.1.3 for communication, culture, and social structure.

To solve this problem, the strategy for training and monitoring was changed from verbal recommendations to concrete pilot farming. [...] We chose leaders for farmer group among potential dairy farmers and intensively gave them training and monitoring until they succeeded in decreasing the germ content. Consequently, they received price bonus for their improved milk quality. Through this method, other members of the farmer groups are interested to imitate or follow the dairying and milking practices demonstrated concretely by their group leaders. (Coop 2, higher performance)

Social leaders can be individuals with high social status in the society, but also group leaders. The fact that the group leaders were selected among potential dairy farmers, expected to successfully adopt GDFP, and to be imitated by other dairy farmers bears the notion that they should have the capability and willingness to improve their dairy practices and that the cooperation with them should exhibit higher likelihood to succeed. Thus, such potential dairy farmers are likely those with more resources, stronger motivation, higher education level or entrepreneur skill, and higher social acceptability or socially renown in the community. By approaching and targeting first the social leaders or ‘insiders’ the cooperatives expected to draw the attention of dairy farmers and gives social importance to a model of good and successful dairy farm. Also the dissemination of GDFP through social leaders (**HC4**) has the advantages that they have stronger social influences which can accelerate information dissemination. Additionally, the information dissemination by social or group leaders was reinforced by practical examples showcased on their dairy farm (**HC6**). The use of pilot or model farm employs visual and demonstrative elements in imparting new information to complement regular extension method using mainly verbal communication.

As in general dairy farmers, their households, and the community where they live do not have the habit of consuming fresh milk, they are not aware of the potential health hazards caused by inappropriate handling of milk⁶¹. Milk is produced only for sale, but not for own consumption. To increase the awareness of milk consumption the cooperatives introduced milk drinking programme for their own staff’s household as well as for schoolchildren in cooperation with local schools. One cooperative launched campaign-like events in milk-producing villages to encourage farmer households and the wider community to consume the milk produced in their own region. On the one hand, such measure stimulated the feeling of pride among dairy farmers for being able to provide nutritious food for their own community. On the other hand, through this approach it was easier for the cooperative to convince dairy farmers and the

⁶¹ Cf. Sub-chapter 10.2.3.2

wider community that milk, be it fresh or processed, is designated for human consumption – for their own consumption –, so that low hygiene standard and inappropriate treatment like adding water or chemicals may cause serious harms for the consumers, i.e. adult people but also children and infants. This provided the basis for the cultivation of the socially acknowledged role of a good dairy farmer (**HC5**): the community became aware that the responsibility of dairy farmers is not only to produce milk, but also to be accountable for its quality.

Due to the large number of dairy farmers and the limited number of extension workers the cooperatives established farmer groups for training and monitoring purposes. Starting from larger groups covering one MCC, the groups were over time divided further into smaller groups to reach an ideal group size of around 8 dairy farmers. In the process of group formation, the dairy farmers had the opportunity to select their own group members. In groups information dissemination has proven to be more effective because dairy farmers had the chance to discuss about the new practices and exchange practical experiences among themselves. As the emotional bond and mutual trust among group members is stronger; the acceptance toward new information is higher. For example, if one member of the group successfully applied one part of GDFP and achieved some improvements, then the rest of the group can learn this experience more easily.

Farmers do not learn from us [experts, consultants, extension workers external to their community], but among themselves. (Exp 1)

The large number of dairy farmers also creates difficulties in the enforcement of quality regulations because it would be too costly to monitor the milk quality and dairy practices for each individual dairy farmer. To support the enforcement of quality regulations, the cooperatives incorporate social pressure in quality monitoring by establishing group pricing (**HC3**) as described in Sub-chapter 10.3.1.1.

10.3.3 Micro variable: Dairy farmers

10.3.3.1 Intermediate outcome: Production of higher-quality milk

The clearly defined product and process quality regulations and their intensive socialisation (**HC1**) increases dairy farmers' awareness of the necessity to handle milk – as a highly perishable product for human consumption – with appropriate care. The technical assistance provided by the cooperatives also improves dairy farmers' practical knowledge – which provides an important basis for the adoption – of GDFP.

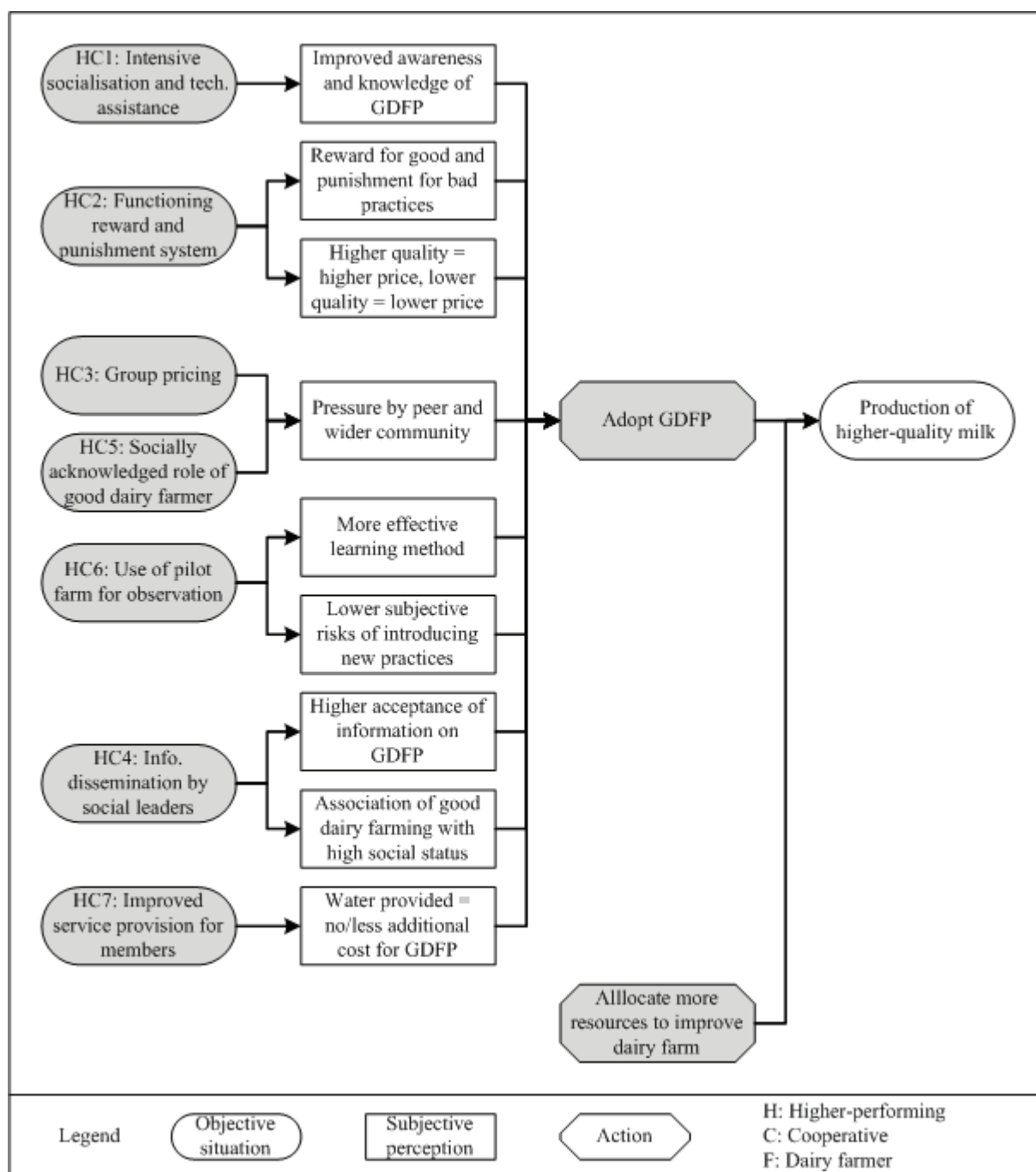


Figure 10-24 Intermediate outcome: Production of higher-quality milk

Source: own compilation

The effectively functioning reward and punishment system in the enforcement of quality regulations (**HC2**), including the quality/price mechanism, creates a balanced incentive system for dairy farmers. Those farmers applying GDFP are rewarded with, first, the opportunity to sustain their dairy business with the cooperative; and, second, the acknowledgement of a good track-record which is an important assessment criterion for loan services. Dairy farmers applying bad practices, on the other hand, are warned and can be excluded from the dairy

business. Similarly, the functioning quality/price mechanism consequently leads to the situation that different farmers or farmer groups receive different farm-gate milk price. This allows dairy farmers to observe concretely the correlation between quality and price. Given the significant price difference between low and high quality milk, dairy farmers learn to comprehend that producing higher-quality milk provides a better strategy to create a more reliable source of income.

For higher efficacy of rule enforcement, the regulative pillar of interaction system was backed-up by the normative pillar. The mechanism of group pricing (HC3)⁶² put an additional peer-pressure for individual dairy farmer because the inability to comply with the quality regulations brought negative consequences for the whole group. Similarly, since a social role of good dairy farmer was socialised in the wider community (HC5), applying inappropriate practices might evoke feeling of guilt or shame – provided that the social role is well internalised in individuals – and face social punishment from other individuals in the community which ranges from least severe, e.g. being talked negatively about or shunned, to most severe, e.g. excluded from the dairy farmers community.

The higher adoption rate of GDFP in higher-performing interaction system is also achieved through more appropriate communication method (on ‘how’ to impart the information) using pilot or model farms (HC6). The establishment of these farms gives dairy farmers, first, the opportunity to concretely observe and thus cognitively understand the best practices applied in real-life context and situation. Also, as the pilot farm is an integral part of the society, dairy farmers have access to the information on GDFP through their experiences in regular interaction with the ‘model dairy farmers’. Hence, the establishment of pilot farms exploits the potentials of visual and experiential learning methods and can complement the limitation of verbal transmission of information. As a result, dairy farmers can learn more effectively.

Second, the establishment of model farms also decreases the risk perceived by dairy farmers. As GDFP are new to dairy farmers, there are at least two kinds of subjective risk of adopting GDFP: whether GDFP would be applicable and attainable for their circumstances and whether the utilisation of more resources (time resource, efforts, equipment, etc.) required for

⁶² See Sub-chapter 10.3.1.2 and 10.3.2.5 for the formation of farmer groups for training and monitoring.

the application of GDFP would be beneficial at all and justified by the outcomes generated. In this respect, the model farms concretely exemplify the application of new practices under real-life and real-business circumstances – rather than under laboratory or ideal situation –, as well as the outcomes of such application, i.e. improved milk quality and farm productivity. Consequently, the first-hand testimony of model dairy farmers regarding the concrete costs and benefits of adopting GDFP can provide more accurate and comprehensive information to other dairy farmers, thereby lowering their subjective risk perception.

Apart from the ‘how’, the ‘who’ in communication is of great significance. As the information on GDFP is disseminated by ‘insiders’ (**HC4**), i.e. fellow dairy farmers acting as group leader; dairy farmers perceive it as more trustworthy and reliable. Since the group leaders frequently also possess higher social status and reputation in the society; dairy farmers are more open and exhibit higher attention as well as acceptance toward the information imparted. Moreover, by disseminating the information through social leaders, the successful application GDFP and its impacts – inter alia, higher milk income – are associated with higher social status. This, in turn, attracted dairy farmers to imitate the practices, because social leaders and their behaviour – in this case – function as an orientation for other members of the community.

To improve product and process quality adequate availability of water for cleaning is necessitated. As the cooperatives collectively provide water through decentralised water reservoirs (**HC7**), dairy farmer in areas suffering water scarcity in dry periods bear no or less additional costs for buying water. As a result, they perceive much lower constraints to apply hygiene practices as prescribed by GDFP.

The explanations above draw the causal relations between the perception of dairy farmers of different situations and the selected action of adopting GDFP. The adoption of GDFP means that the dairy farmers start and consistently perform the dairy practices as described in the SOPs defined by the cooperative. The widespread adoption of GDFP contributed to the production of higher-quality milk, i.e. improved milk hygiene and milk composition. For example, as one part of GDFP, the abandonment of adulteration practices automatically, first, reduces the severity of bacterial contamination as no additional bacterial contamination is introduced into the milk; and, second, improves the milk composition as the milk is not diluted with additional water. Nevertheless, the adoption of GDFP is also a matter of resource allocation by dairy farmers which will be discussed further in Sub-chapter 10.3.3.3.

10.3.3.2 Intermediate outcome: Improved animal and farm productivity

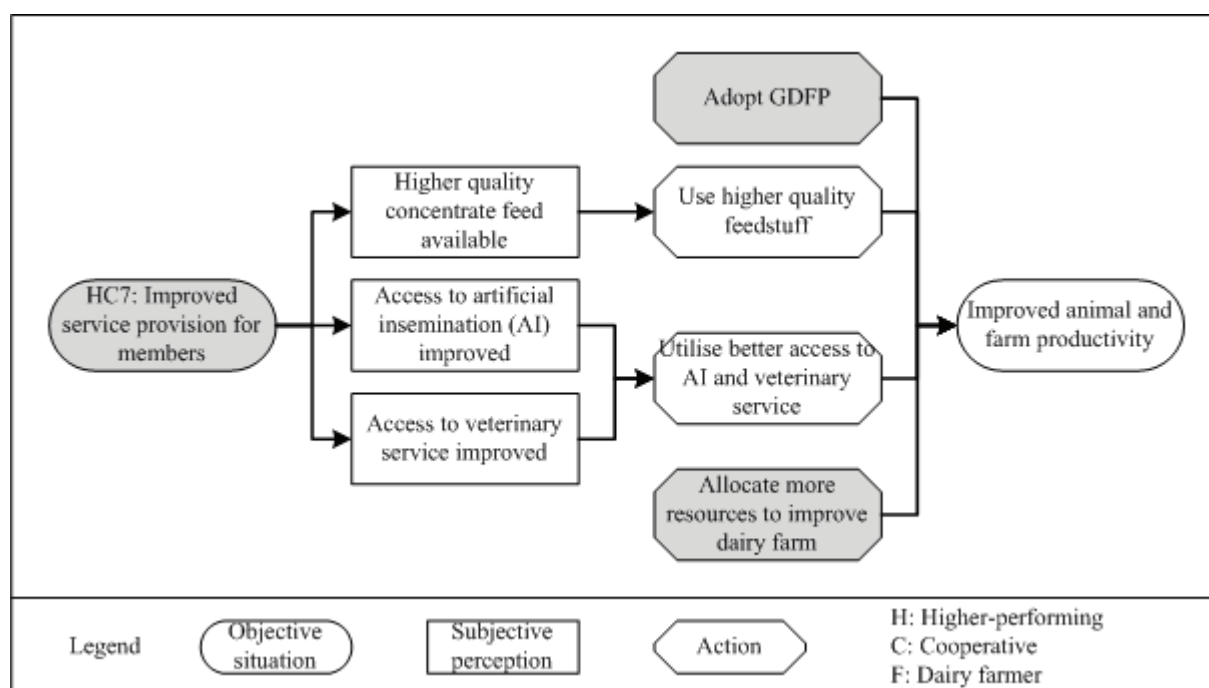


Figure 10-25 Intermediate outcome: Improved animal and farm productivity

Source: own compilation

The adoption of GDFP did not only result in the improvement of milk quality, but also of the animal and thus farm productivity, because GDFP also entails improved practices in the management of feeding, reproduction, and animal health. However, it is important to emphasise that the adoption of the practices were encouraged by the simultaneous improvement of services to dairy farmers provided by the cooperative⁶³. These services included the collective production of higher-quality concentrate feed, provision of AI, and access to (para-) veterinary service. With these services dairy farmers were able to apply higher quality feedstuff in the feeding ration, thereby improving the milk production of lactating cows and the body condition of dry cows. Similarly, the improved access to AI and veterinary service reduces service per conception ratio, calving interval, and animal diseases which could be detrimental to the milk production. Another selected action contributing to the improvement of farm productivity is the allocation of more resources to improve dairy farm.

⁶³ See Sub-chapter 10.3.2.1 for the improvement of service provision for members.

10.3.3.3 Selected action: Allocate more resources to improve dairy farm

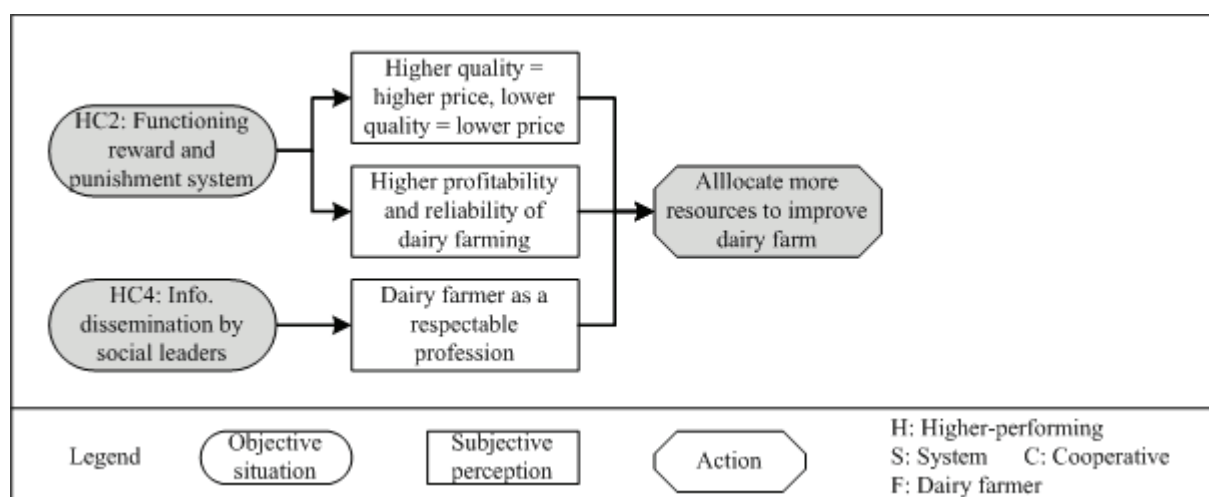


Figure 10-26 Selected action: Allocate more resources to improve dairy farm

Source: own compilation

The allocation of more resource to improve dairy farm was a necessitated action for improving milk quality as well as animal and farm productivity. For example, the improvement of milking management required not only correct practices but also food-grade equipment (stainless or aluminium milk bucket and milk can) and adequate cleaning system (enough water, hot water, detergent, and cleaning utensils). As milk hygiene is also determined by the hygiene of the environment, the animal shed should also be improved, inter alia, by changing the construction from a traditional design into a design more appropriate for dairy farming (separate manure disposal area, concrete floor with slight elevation for better draining or “bamboo stage”⁶⁴, better ventilation and lighting, etc.). Similarly, to improve animal productivity dairy cows require higher-quality feedstuff which in turn necessitates either higher feed cost or labour cost e.g. in the case of silage making or wilting fresh forages before feeding it to the cows. Last but not least, the allocation of more resources also means that dairy farmers opted for accumulating the capital for the dairy farm, i.e. increasing herd size, which could be at the cost of other sources of income.

The selected action was grounded in three subjective perceptions of the dairy farmers. First, as the quality regulations, including the quality/price mechanism, were functioning effectively

⁶⁴ A cow stall made of bamboo material built above the ground level to allow easier cleaning with water.

(HC2), dairy farmers perceived an incentive to concentrate on producing higher-quality milk. The price incentive was presumably high enough so that dairy farmers were willing to spend more resources to achieve higher quality or, in other words, the marginal milk yield from increased price is higher than the marginal costs required for achieving the quality. Second, dairy farmers perceived that dairy business offered higher profitability (also on account of better income flow from milk payment every 10 days) and higher reliability (milk price is more stable than the price for other agricultural products) than other sources of income, so that specialisation on dairy business provided a better livelihood strategy. This is indicated by the fact that, first, there are a considerable number of young individuals who decided to engage in dairy farming (both those who continued their parents' dairy farm and those who started new business in dairy farming); and, second, most dairy farmers in the higher-performing interaction system rely on dairy farming as the main source of income.

In the case of one higher-performing cooperative in East Java, specialisation on dairy farming was further reinforced by the situation that other types of agricultural production or livelihood sources were less attractive and feasible, i.e. lower opportunity cost for dairy farming.

One of the sub-districts covered by our cooperative produces 60% of the total cooperative output. In this sub-district the milk production is in steady increase because dairy farming is the only profitable agribusiness. The soil is not so fertile and not really good for crop farming. (Coop 2, higher performance)

Nevertheless, it is also important to note that in another higher-performing cooperative the situation is the opposite: In the course of urbanisation the market conditions for agricultural products has been changing in favour of fresh fruits and vegetables, so that the opportunity cost for dairy farming has been increasing. As a result, milk production capacity was gradually declining because dairy farmers opted for allocating more resources for other agricultural production.

Nowadays, producing fruits and vegetables is more attractive because farmers can obtain higher prices by selling their products directly at marketplaces. The demand for such products is also increasing because more people become aware of the need of fruit and vegetables for a healthy living. [...] But as long as the competition between dairy farming and other types of agricultural production runs positively, I think there will be a natural selection. Those farmers performing better in dairy farming will continue; those not will choose another business. (Coop 3, higher performance)

Third, based on the fact that social leaders were the first to adopt GDFP and thus achieved successful dairy farming, dairy farmers in general associated professional dairy farming management with higher social status. In this respect, the profession as dairy farmer was ameliorated and received social prestige, because it is exercised by social leaders – reputable indi-

viduals in the community. As a result, dairy farmers had higher motivation to succeed in dairy farming and thus were willing to intensify resource allocation for it.

10.3.4 End outcome: Higher and improving chain performance

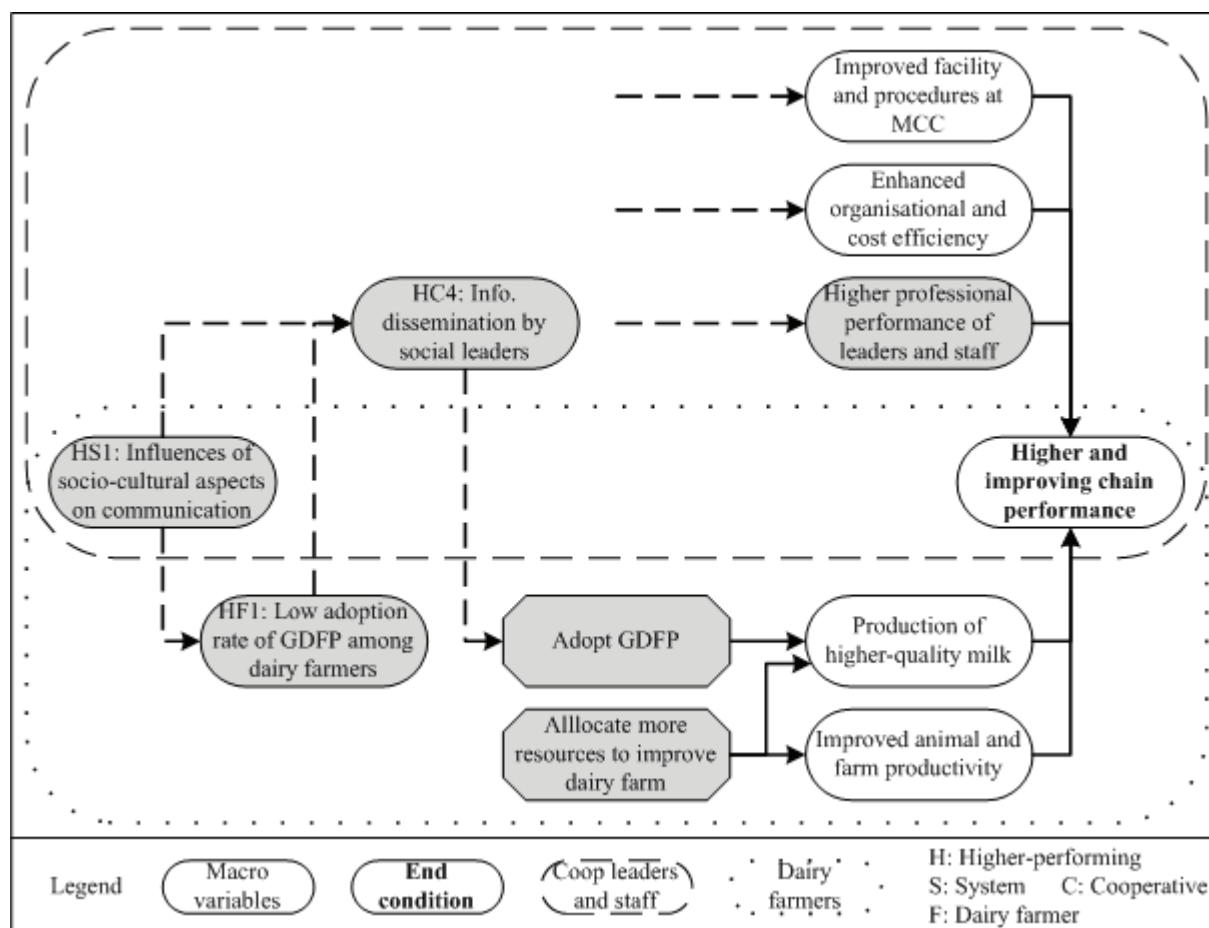


Figure 10-27 End outcome: Higher and improving chain performance

Source: own compilation

Figure 10-27 illustrates how the interaction of the intermediate outcomes results in the end condition. The ‘production of higher-quality milk’ and ‘improved animal and farm productivity’ by the dairy farmers in conjunction with the ‘improved facility and procedures at MCC’ explain the higher chain performance; whereas the ‘enhanced organisational and cost efficiency’ and ‘higher professional performance of leaders and staff’ of the cooperatives as well as the selected action to ‘allocate more resources to improve dairy farm’ explains why the chain performance has improved over time.

The figure above also depicts the mutual influence and interdependency between the macro variables of the system, cooperatives, and dairy farmers. As an example, the macro variables

leading to the intermediate outcome ‘production of higher-quality milk’ are briefly explained here: The ‘influences of socio-cultural aspects on communication’ (**HS1**) prevented dairy farmers from accepting the practices recommended through conventional extension system, resulting in the ‘low adoption rate of GDFP among dairy farmers’ (**HF1**). Facing such constraint, the cooperatives then utilised the ‘influences of socio-cultural aspects on communication’ (**HS1**) in the training and monitoring system by, inter alia, approaching ‘social leaders to disseminate information on GDFP’ (**HC4**). This approach has brought the desired effect: dairy farmers were willing to ‘adopt GDFP’. With increasing number of dairy farmers adopting GDFP the aggregate quality of the milk produced is improved.

10.3.5 Overview of the variables in the higher-performing interaction system

Figure 10-28 presents the overview of the variables in the lesser-performing interaction system. Listed here are all macro and some important micro variables.

10.4 Summary and concluding remarks

10.4.1 Change of the interaction system

The overview of the variables of both the lesser and higher-performing interaction system (see Figure 10-16 and Figure 10-28) shows that the cooperatives exert more influences on the dairy farmer than the opposite, because the cooperatives determine the institutional framework in which the dairy farmers operate. While the low and stagnating performance of the dairy farmers is indirectly caused by a combination of the objective situations inherent in the dairy farmers’ own system and those resulting from the action of the cooperatives; the higher and improving performance of the dairy farmers results solely from the objective situations created by the cooperatives. It is the cooperatives that created and enforced the regulations with functioning incentive system, established socio-culturally adjusted training and monitoring system, and provided necessary collective services. Thus, it can be said the cooperatives are the change agent in the interaction system.

The progressive changes implemented by the cooperatives are ultimately driven by their committed leaders. Their strong convictions of ‘cooperative as change agent or pioneer’, ‘cooperatives as professional organisation’, and ‘dairy business as core business’ are the main driving power. Interestingly, these perceptions are not grounded in any objective situation of the interaction system – no contextual effect. These are not the typical definition of situation by individuals, because otherwise the leaders of lesser-performing cooperatives would also have the same perceptions as they were situated in, more or less, similar initial condition. Hence,

such perceptions can be attributed to the inherent qualities of committed leaders. This conclusion highlights the significant role of committed leaders in development processes.

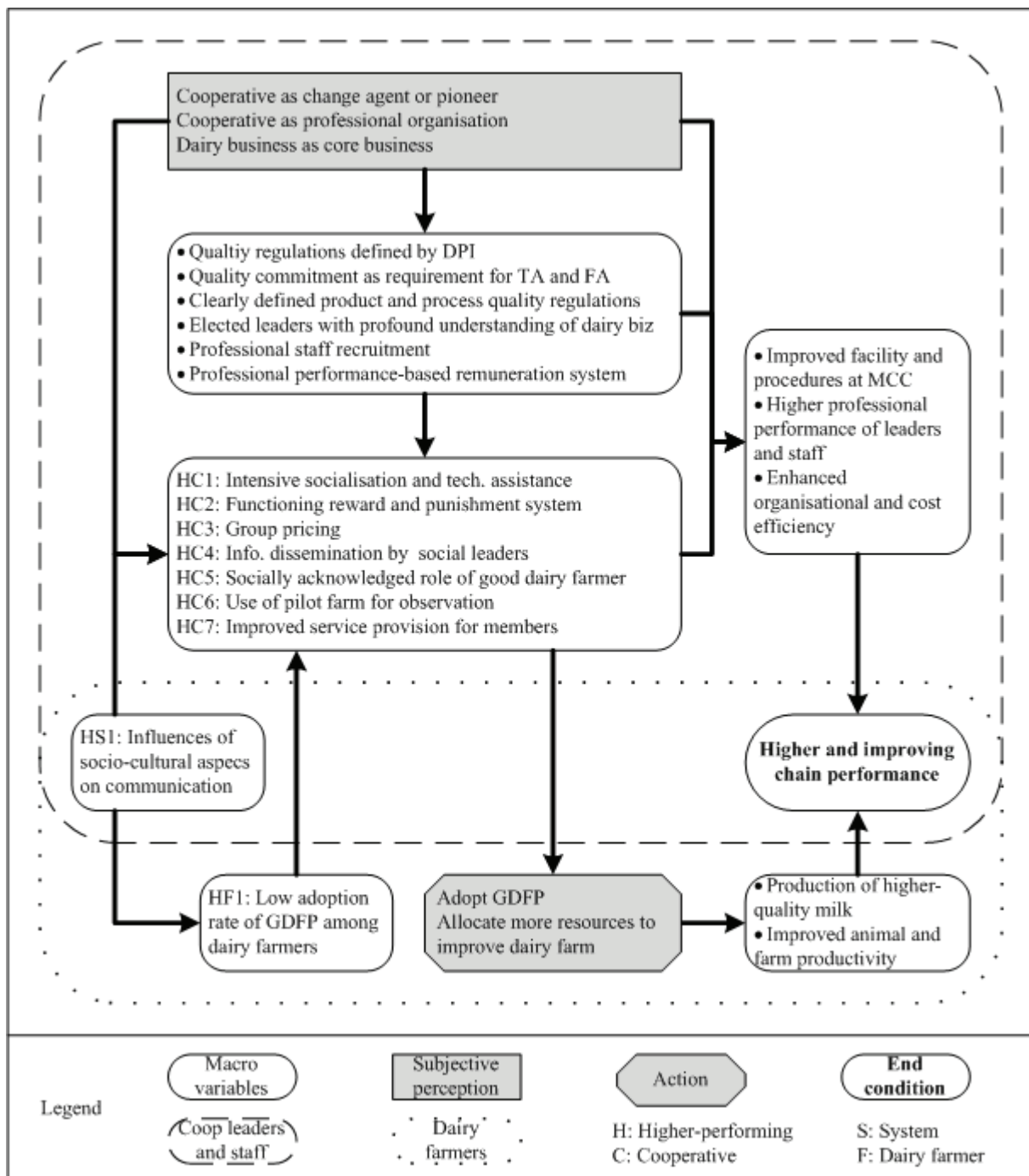


Figure 10-28 Overview of the variables in the higher-performing interaction system

Source: own compilation

Of particular importance is also the effective transformation of strong commitments into sustainable improvements in the interaction system. The committed leaders have the ability to change the system because they have the power and authority as leader to do it. However,

they do not haphazardly take improvement measures to change the collective phenomena; but rather, they identify the roots of the problems – which are not only regulative, but also normative and cultural-cognitive in nature – and address these in appropriate manner. Even the cultural-cognitive constraints in communication were turned into an effective approach in disseminating GDFP and encouraging dairy farmers to adopt it. Apart from this, the committed leaders aimed at the reform of the institutional framework. Their actions were directed toward institutionalising the improvement measures by altering the existing structure of the interaction system. Instead of conducting sporadic training activities the committed leaders established permanent functions of extension service and group monitoring as well as an incentive system to induce behavioural change among dairy farmers. Similarly, to break the habitualised practice of adulterating milk with water the committed leaders did not only conduct strict policing activities, but also established a reward and punishment system making opportunistic behaviour a sub-optimal option for the dairy farmers. In such manner, the improvements are continuous, as they are incorporated in the structure of the system, and capable of reaching more dairy farmers.

10.4.2 Institutional aspects

Table 10-3 Overview of the institutional aspect in influencing the interaction systems

Aspect	Lesser-performing interaction system	Higher-performing interaction system
Regulative	Weak quality regulation, absent incentive system, ambiguous organisational format of VUC, low professional performance, inadequate service provision	Well-defined and enforced quality regulations, functioning incentive system, specialised dairy cooperative, higher professional performance, improved service provision
Normative	Social norm of <i>pakewuh</i> , principle of ‘familialness’ in cooperative management	Group learning, monitoring, and pricing; social role of a good dairy farmer
Cultural-cognitive	Dairy farmer as non-traditional profession, no habit of drinking milk, subsistence orientation, dairy farming as sideline job, acceptance of opportunistic behaviour	Problem of cultural and social relation in communication, information dissemination via social leaders, visual and practical learning, social imitation, increasing consumption of own-produced milk, increasing specialisation on dairy farming

Source: own compilation

The cases clearly demonstrated that the regulative aspect of institution is an important determinant factor for the performance of the interaction system. The clear definition and consequent enforcement of the quality regulations as well as the enabling of dairy farmer and cooperative staff to comply with the regulations are basic necessity for improving the system. The regulative aspect does not, however, stand alone; it is strongly correlated with the normative aspect. A positive correlation is the case where the rule enforcement is reinforced by the nor-

mative aspect through group learning, monitoring, and pricing. A negative correlation is the case where the enforcement of quality/price mechanism is hampered by the social norm of *pakewuh*. The degree of internalisation of normative values and norms differs in every community. Albeit prevalent in most Indonesian – and even Asian – communities, the social norm *pakewuh* is strongly internalised in the lesser-performing interaction system. This unintentionally created an additional constraint in rule enforcement, thereby heightening the complexity in curbing opportunistic behaviour.

The difference in the organisational format of lesser and higher-performing cooperatives proved to be substantial, as it reflects the orientation of the cooperative management. Organisational factors inhibiting the development of dairy business are: Dairy business as non-core business, maximisation of surplus, principle of ‘familialness’ in cooperative management, cooperative as dependent social organisation. Organisational factors supporting the development of dairy business are: Dairy business as the core business, cost reduction through optimal provision of collective services, cooperative as professional management and change agent.

The rejection of GDFP through the continuation of adulteration practices by dairy farmers was not solely caused by the absence of proper incentive system and acceptance of opportunistic behaviour; cultural-cognitive factors also came into play: Orientation toward traditional common practices as dairy farming is not a traditional profession, no habit of consuming own-produced milk, dairy farming as sideline job, and subsistence orientation. Similarly, the adoption of GDFP by dairy farmers was not purely on account of the incentive system, but it was also reinforced by socio-cultural aspects: Pressures exerted by peer dairy farmers and the wider community due to the acknowledged role of good dairy farmers, visual and practical learning method embedded in the real-life and real-business context, and information dissemination by social leaders which also encourages social imitation. Of particular importance, both cases were demarcated by the absence/existence of collective services provided by the cooperatives.

There is a strong indication that specialisation is an inevitable development path toward higher performance for both dairy farmers and cooperatives. By concentrating resources – e.g. efforts, time, money, and attention – on one focus – i.e. the dairy business – the likelihood of achieving successful improvements is much higher. By specialising on the dairy business dairy farmers and cooperatives are subjected to additional pressures to succeed, because the dairy business is the main – if it is not the only – means of sustaining and improving their

livelihood. Hence, specialisation also entails certain, not to be neglected, risks. The situation of monopsony and possible cartel agreements by DPIs increases the risk that DPIs misuse their greater market power to impose one-sided changes of more demanding technical requirements or contractual agreements. Other risks include the unfavourable price condition due to low bargaining power (price-taker) against DPIs, price instability of concentrate feed, and adverse climatic conditions of extended dry periods.

11 Reflection and Conclusion

Closing this study, Chapter 11 provides a reflection on the research results particularly concerning the issues of institutional aspects and the link between value chain governance and upgrading. The second sub-chapter discusses briefly the consequence of the research results on the model of individual behaviour and poses several suggestions for follow-up studies. This sub-chapter also reports the lessons learnt drawn from the application of the research framework in empirical study. The last sub-chapter presents the relation between this study and the topic of development cooperation, highlighting the role of collective action and local leader. Finally, a suggestion is made to extend the conceptual framework of value chain analysis by incorporating wider socio-cultural aspects.

11.1 Reflection of research results

11.1.1 Regulative aspect of the interaction system

The regulative aspect of an institution proved to be significant in the interaction system of both DPIs-cooperatives and cooperatives-dairy farmers. It was the quality of the regulative aspect that, among others, determined the performance of the interaction system. While authors like North (1990/2005) gave primacy of the issues of rule-setting, monitoring, and sanctioning activities to the regulative aspect, the research results called for stronger attention toward the issue of enabling participants of the institution to comply with the rule. The cases demonstrated that without any assistance the participants of the interaction system, in particular the cooperatives and dairy farmers, could not improve their own capability to bridge the wide gap between the ideal requirements as defined by the rule and the actual capacity in possession.

The collective economic activities of dairy farming was regulated, managed, coordinated, and supported through the cooperative as organisation – an embodiment of a set of rules in the interaction system. Despite its central role and strategic functions for the collective actions many dairy cooperatives, in particular those with VUC organisational format, had fundamental deficiencies of contradictory principles in itself. This resulted in the low and stagnating performance of both the organisation and the members. Such erroneous concept of cooperative is, however, not only restricted to Indonesia but also pervasive in many other developing

countries that introduce and adopt cooperative system in their economy. Drawing on empirical experiences as international expert on cooperative development Tchami (2007) concluded:

This concept is not always understood by members and directors of cooperatives who often think that the role of a cooperative is to create surpluses; whereas, as mentioned previously, its role is something quite different: to respond as effectively as possible to the needs of its members. More particularly, for a consumer cooperative: to sell its products at the lowest possible price and/or in the best conditions for the shopper; for a credit union: to allow its members to save their money at the highest possible interest rate and likewise to allow them to take out credit union loans at the lowest possible rate of interest. (Tchami 2007, p. 20)

The author also noted that, the contradictory organisation format of the cooperatives was caused by inappropriate government interventions in using the cooperatives as political instrument – similar to the case in Indonesia.

After independence in the colonized countries, the governments of the newly independent States accorded an essential role to cooperatives especially in the development of rural areas. Nevertheless, in most of these countries cooperatives remained a State-owned tool with which to control the masses. (Tchami 2007, p. 10)

The reform and advancement of cooperatives' professional performance, and thus also the members', was primarily driven by the committed leaders behind them – which were rather the exceptional cases. The significance of influential character as leader in accelerating cooperative development was also pointed out by Baga (2004). He attributed the positive turning point of Indonesian dairy production in the late 1970s to a particular cooperative leader. The coop leader seized the momentum to proactively approach, lobby, and encourage the newly established Department of Cooperative to play more active role in developing the national dairy business by, inter alia, supporting the formation of UIDC, enacting support policies such as *Busep*, and subsidising dairy cattle import programs. As a result, the domestic milk production increased continuously during the 1980s until the early 1990s. The decline of domestic milk production commencing in mid 1990s was caused, as Baga (2004, p. 279) argued, by the diminishing involvement of this particular coop leader in the macro institutional processes and the absence of a successor with comparable professional commitment. Hence, Baga (2004) concluded¹ that high-quality cooperative entrepreneur – who accelerated change proc-

¹ Cf. Tchami (2007, pp. 51–54)

esses in micro (primary cooperative), meso (secondary cooperative), and macro level (national policy) – was the critical success factor for cooperative development.

11.1.2 Normative and cultural-cognitive aspects of the interaction system

In addition to the regulative, the social and cultural-cognitive aspects showed differing importance in the interaction system DPIs-cooperatives and cooperatives-dairy farmers. In the former, shared social values and norms or certain habit and orientation toward common practices were not identified as an influential factor, because both VC operators were not situated in the same community and their relation was limited primarily to business relation. However, the issue of trust and trustworthiness was extremely influential for DPIs in deciding whether to invest TA and FA to their suppliers – a requisite condition for VC upgrading. From empirical case studies Morris (2001) concluded that trust among VC operators is by no means an ubiquitous good, yet is a basic condition for any cooperative measure:

However, overcoming longstanding barriers to trust and translating this into actual cooperation with mutual benefits proved more complex. [...] even the offer of financial incentives is not enough to widely encourage firms to cooperate. In our experience, in low trust environments it is extremely difficult to encourage cooperation through the medium of policy-support mechanisms [...] (Morris 2001, p. 129)

Against the background of prevalent opportunistic behaviour and weak law enforcement the cooperation with trustworthy business partners reduced significantly the subjective risk perception. Similar proposition was posited by Granovetter (2001) who in his theory of embeddedness viewed that concrete interpersonal relation is necessitated to generate trust and discourage malfeasance.

The widespread preference for transacting with individuals of known reputation implies that few are actually content to rely on either generalized morality or institutional arrangements² to guard against trouble. (Granovetter 2001, p. 57)

Basically the proposition that intimate interpersonal relation can prevent opportunism is closely related with the social norm *pakewuh* which also treasures the quality of interpersonal relation. Nevertheless, the empirical case showed that in the area where the social norm

² In this context the author referred to ‘institutional arrangements’ as a set of rules, i.e. institution in the narrower sense.

played important role in guiding individual behaviour opportunism was prevalent. Thus, it raised the question: Why was opportunism pervasive among individuals who highly value their relationship with others and are willing to avoid conflict potentials at any cost? The answer lay in the fact that opportunism does not necessarily bring negative impact to personal relations. As long as the opportunistic action creates impersonal effects, namely not directly affecting the relationship of persons knowing each other, it does not stand in conflict with the social norm. For example, when dairy farmers adulterated milk with water or did not pay off their loan, they did not create direct negative impact to certain persons they know in the cooperative, but rather to the cooperative as organisation. Similarly, when cooperative staff and leaders applied higher deduction than allowed from the loans to be distributed to the dairy farmers, they did this in the name of the cooperative and not personally. In this respect, malfeasant actions did not stand in conflict with the social norm, but the correction of malfeasance and the enforcement of regulations did.

Contrary to their limited influences in the interaction system between DPIs and cooperatives, the normative and cultural-cognitive elements wielded enormous influences in the interaction system between cooperatives and dairy farmers. This was confirmed by the results of another empirical study. Inquiring into the decision making processes of semi-commercial farmers, Sambodo (2009) conducted a case study of technology adoption of '*pandu*', i.e. improved paddy-prawn system, by comparing two villages in Lamongan, East Java, Indonesia. His empirical research results bore a striking resemblance with those in this research.

The results highlighted that farmers use rational strategies, and that socio-cultural factors influence decision making. (Sambodo 2009, p. 2)

The farmers behaved rationally in the sense that they had a particular goal and took into consideration different factors according to their respective circumstances to come to a decision whether to adopt or to ignore or discontinue *pandu*. Regarding the subjective risk perception the farmers viewed the adoption of the new technology as a risky undertaking because they had lack of resources, limited knowledge, and restricted access to information. Also, the situations where some farmers had unsuccessful experiences in adoption resulted in heightened risk perception by other fellow farmers. Hence, they preferred retaining their familiar commodities and practices which provide low yet stable and reliable income to embracing the new technology which provides higher yet less reliable income. This situation corresponded to the situation of the dairy farmers in the lesser-performing interaction system where the constraints

in know-how and resources as well as the heightened subjective risk perception of intensification caused the dairy farmers to opt for preserving the existing practices which were oriented to the common practices in the society.

The author concluded that despite varying decision considerations the decision making model of the observed farmers could be classified into ‘intuitive’ farmers, i.e. farmers who analysed their options and planned their next actions based on the experiences of their past performance and the qualitative measures elicited from passive observation on others’ practices; this stood in contrast to ‘analytical’ farmers who relied more on quantitative business calculation. This distinction is equivalent to the dichotomy of ‘pattern-recognising or connectionist’ vs. ‘abstract reasoning or computational’ model; the former has proven to be more predominant among the farmers.

The social-cultural factors influencing the decision making ranged from household or family concerns to interpersonal relations with the ‘significant others’ in the society. The farmers had to weigh up the option of adopting new technology against the own household concerns, as it both affected resource allocation in the family and required the support of family labour – an obvious indicator for subsistence orientation in the traditional economy. The information dissemination, adoption intention, and learning process were strongly influenced by the interaction with the ‘significant others’, namely peers and particularly the leader of farmer groups; social and religious leaders exerted much weaker influence in the process. As the adoption also necessitated a consensus, particularly in water and pesticide use, with neighbouring farmers who happened to different objectives and choice of commodities, the farmers preferred to give up *pandu* than having an argument with their neighbours, thereby losing the opportunity to improve their own livelihood. Such behaviour resembled that of lesser-performing cooperative leaders who gave up the enforcement of quality regulations and quality/price mechanism to avoid interpersonal conflicts at the cost of abandoning the potential to improve the performance of the interaction system and cooperative members. Sambodo (2009, p. 252) also noted that despite their immediate proximity the observed neighbouring villages showed distinct socio-cultural influences on the farmers which, in turn, resulted in different responses toward the new technology.

Another empirical study conducted by Sulandjari (2008) investigated the economic behaviour of small industries producing wood furniture, garment, and metal utensils in Central Java. The

observed small industries which were categorised as semi-commercial enterprises exhibited a distinct behaviour in selecting and establishing linkages with business partners. Guided by the locally prevailing Javanese normative values in business ethic, the enterprises favoured certain business partners because (Sulandjari 2008, p. 248):

- i. the partner is my neighbour (“*mergo tonggo*”),
- ii. the partner is my friend (“*mergo konco*”),
- iii. I have longstanding relation with the partner (“*mergo kulino*”),
- iv. I have good feeling of trust and satisfaction toward the partner (“*mergo roso – mantep lan marem*”), and
- v. the partner offers good price (“*mergo rego*”).

Note here that the consideration of price – which is influential in determining the profitability of their business – was only one among many considerations. The behaviour of profit maximisation was not confirmed here; rather, the enterprises followed the principle “*tuna sathak bathi sanak*” which means that it does not matter to suffer small losses in exchange for gaining new friends, brothers, and sisters. It became apparent that business relations were inextricably intertwined with kinship and familial relations. This result also confirmed the higher valuation of family and social concerns in business decision-making among subsistence or semi-commercial oriented economic actors.

In sum, the cases demonstrated that economic actions could not be separated, yet could be distinguished, from other aspects of human’s life. Socio-cultural factors played as the reasons for economic actions and also as the ends or goals of economic actions. Thus it confirmed Weber’s these that economic phenomena should be analysed in conjunction with the non-economic phenomena influencing the economic phenomena (‘economically relevant phenomena’) and non-economic phenomena influenced by the economic phenomena (‘economically conditioned phenomena’)³

11.1.3 Value chain governance and upgrading

³ See Sub-chapter 3.3.1.

The application of the omnibus conception of institution advanced by Scott (2008) to extend the existing, yet limited, concept of VC governance has brought fruitful results. It provided more comprehensive understanding and realistic picture about the interactions and interdependencies of VC operators. Central issues in VC governance were illuminated in more elaborate detail. The investigation into the institutional pillars of the interaction system revealed that communication, transmission of information, and learning process were strongly influenced by normative and cultural-cognitive elements, and not only by regulative arrangements. Regarding the issue of power relation along the chain, it became apparent that despite possessing the largest market power DPIs as ‘lead firms’ could not easily “lead” – in terms of coordinating, setting and enforcing regulations, and driving upgrading – the VC operators backward the value chain; the role and function of cooperatives – in particular their committed leaders – in governing of the value chain was indispensable.

The reform in the cooperative organisation – the process upgrading within cooperatives – yielded significant improvement in infrastructure and equipment for collective dairy production, cost efficiency, and organisational performance. All these resulted in, first, the process upgrading between cooperatives and dairy farmers, i.e. the effective implementation of quality regulations and socio-culturally adjusted training and monitoring system; and, second, the functional upgrading of improved collective services for the dairy farmers. The functioning incentive and support system for dairy farmers prompted them to adopt improved dairy practices and invest more in their dairy business – the process upgrading within dairy farmers –, thereby increasing the overall quality of the fresh milk which provided fundamental basis to improve the competitiveness of the whole VC – the product upgrading.

As for the VC upgrading, particularly in the interaction system between cooperatives and dairy farmers, the incorporation of socio-cultural factors into the upgrading strategy was necessary. Had the established incentive system, strict monitoring, consequent enforcement, and extension service been completely sufficient to address the constraints and improve the existing conditions; the higher-performing cooperatives would not have resorted to upgrading strategies that premised on thorough considerations of the prevailing socio-cultural factors. Therefore, similar approach of VC upgrading should be employed in semi-commercial and traditional systems.

The differing importance of diverse institutional elements in the interaction systems DPIs-cooperatives and cooperatives-dairy farmers suggested that each interaction system had distinct governance type. While the interaction system between DPIs and cooperatives could be characterised as a commercial system with particular emphasis on the issue of trust, the interaction system between cooperatives and dairy farmers resembled more closely a semi-commercial system or traditional economy with influential socio-cultural factors. Hence, the widespread conception that there is a single governance type for the whole value chain should be abandoned.

11.2 Reflection on research framework

The research framework of this study employed the broader conception of institutional theory and the weak version of methodological individualism to explicate the causal relations between VC governance and upgrading (macro variables) with resort to the subjective perception and action of VC operators (micro variables). It accentuated the importance of not only identifying the association or relationship between social phenomena, say, of I (initial condition) and E (end condition), but also plausibly explaining in more detail why I has resulted in E, namely through which systematic processes or mechanism I influenced individuals who, in turn, select a particular action leading to E.

This approach resembles the social theory advanced by Hedström (1998) termed ‘social mechanism’. It emerged against the background that many social “theories” are void of plausible explanatory power since they are either limited to describing unique social phenomena or to associating macro social variables through statistical correlation or probability law without further elaboration on the mechanism linking *explanantia* and *explanandum*, as it is in the case of black-box explanations in the sociological research on class and its individual correlates:

A statistical association between “class” and income, or “class” and health, tells us that individuals from certain “classes” have lower incomes or worse health than others, but it says nothing about why this is the case. (Hedström 1998, p. 11)

Thus, the proponents of social mechanism posited that sociological theory should take a middle ground between general social laws claiming universal validity (nomothetic) and idiographic description – middle range theory using general types of social mechanisms. As the core idea of social mechanism was built on Coleman (1990)’s Macro-Micro approach which

was further extended by Esser (1999), the typology of social mechanisms suggested were equivalent to Esser's terminology: The situational, action-formation, and transformational mechanisms in comparison to logic of situation, selection, and aggregation. Social mechanism also underlined that individuals should be treated as causal agent and not social macro variables.

11.2.1 Model of individual behaviour

The empirical research results showed that the behaviour of individuals in different interaction system exhibited different characteristics. In the interaction system between DPIs and cooperatives which was more commercial oriented; expedient, self-interested and profit-maximising pattern was more manifest. This was reflected from their subjective perceptions. However, a fully-informed individual model was disproved here. DPIs had restricted access to information about the reputation of cooperative leaders and thus had to deal with uncertainties of malfeasance behaviour. Cooperatives faced limited knowledge and information about market, technology, and so forth. On the contrary, in the interaction system between cooperatives and dairy farmers which was more semi-commercial and subsistence oriented, such behaviour was not the predominant pattern. But rather, individual behaviour followed a mixture of different patterns. Individual action, using Weber (1922/2005, p. 57)'s terminology, was:

- i. **instrumental (*zweckrational*)**: attempting to achieve a certain goal by considering different kind of, not only economic, factors with limited resource in possession;
- ii. **oriented toward normative system (*wertrational*)**: guided by prevailing normative norms, values, and roles in the society; and
- iii. **following habit or common practices (*traditional*)**: oriented toward recurrent practices or past actions of individuals.

Satisficing behaviour was also observed among lesser-performing cooperative leaders and dairy farmers. The cooperative leaders perceived that the efforts and resources to improve the existing, low-performing dairy business were too demanding and exceeded the expected benefits. Hence, they preferred to retain the existing level. Similarly, the dairy farmers perceived the existing condition of their dairy farm was sufficient for them and did not strive for betterment. According to Esser (2002, pp. 309-313, 326-327), satisficing behaviour was a result of, first, the bounded rationality in a complex situation resulting in the inability to discern better alternatives; and, second, the high cost of decision making including finding appropriate in-

formation, efforts, attention, and consideration of alternatives. However, the empirical study showed that such behaviour could also be influenced by cultural values. In the traditional economy the fundamental preference in economic pursuits was not to continuously improve the business and achieve higher economic status, but to generate ‘sufficient’, ‘enough’, and ‘decent’ livelihood for the household.

An atomistic view of individual behaviour should be abandoned, because in any observed case VC operators always took into consideration the action, perception, need of and relation with other individuals. Also, an oversocialised view of individual behaviour was not confirmed. Despite the fact that the influences exerted by the system and other individuals were enormous, individuals were not dictated by these influences and able to think and act “outside the box”. This was evident particularly in the case of the committed cooperative leaders whose perception and action differed from and thus not a typical of the majority. Hence, the results confirmed Granovetter (2001, p. 57)’s criticism about the atomisation and oversocialisation of individuals.

Both egoistic and altruistic behaviour was observed in the empirical cases. The first was related with the pursuit of self-interests through malfeasant action irrespective of the negative impacts upon other individuals, such as in the case of corruption in the support programs for dairy farmers. The latter concerned the case of committed cooperative leaders whose resolution was to bring advantages and betterment to the dairy farmers – at least through improving cooperative management – although such action would bring disadvantage to the cooperative leaders themselves, e.g. by rejecting the opportunity of misusing their position without being punished to obtain benefits for themselves.

The discussions above signified that individuals follow RREEMM-Model, i.e. Resourceful, Restricted, Evaluating, Expecting, Maximising Man. Following Esser (2002, pp. 231–250), individuals have reasons for their action, consider and reflect on the alternative actions, and can find solutions to their situation through their creativity (resourceful). But they and their actions are also constrained by the own cognitive ability, limited information, and other environmental or social constraints (restricted). Individuals select one among many alternatives based on their judgement about the value of each alternative (evaluation) and their subjective perception whether the value will accrue if they choose the action (expectation). As individu-

als have different preferences, utilities, or goals; by their action they attempt to attain these goals by deciding on the alternative with the most optimum value (maximising).

11.2.2 Way forward: Further studies

Being exploratory in nature, the research has identified diverse institutional factors influencing the action of individuals in an interaction system and used these economic, social, and cultural factors to explain the social phenomena in question. There are, however, some interesting issues which require follow-up in further studies:

- Against author's own prediction, religious values were not identified as an influential factor on individual behaviour, as they were not mentioned during the empirical study. Perhaps, religious values were perceived as a highly personal matter and thus not expressed during the empirical observations. But it could also be the case that religious values had indeed little influence on individual behaviour. Thus, it is interesting to further observe and identify, for example, how objective, socially acknowledged religious values relate to opportunistic behaviour or how internalised religious values confront malfeasant behaviour.
- The pivotal point of the development of rural economy was characterised by the shift from traditional to more (semi-)commercial oriented individual behaviour. The change toward more (semi-)commercial system required individuals to specialise on particular economic activity and to comply with more demanding market and technical requirements. However, a comparison with further or other case studies should be drawn to verify whether specialisation provides a better alternative for advancing rural economy and whether the abandonment of subsistence orientation (multiple sources of livelihood for risk minimisation) does not pose risk for rural population.

On top of this, the research did not cover the issue of ordering the strength of influence exerted by the identified factors. For example, which institutional factor wielded the strongest influence on the dairy farmers' action of adulterating milk with water? Was it the weak material incentive of lower milk price, the general acceptance of opportunistic behaviour, the absence of the habit of consuming own-produced milk, or other factors? On the contrary, which institutional factor influenced the adoption of GDFP? Was it the stronger material incentive of higher milk price, the information dissemination by social leaders, the group pressure, or other factors? Moreover, the comparative analysis of the ordered strength of influences be-

tween the rejection – i.e. the adulteration of milk with water – and adoption of GDFP may shed light on the details of transformation processes from rejecting to adopting behaviour. The same approach can be applied to other selected actions. Through such extension, the understanding of individuals' perception and decision making in a dynamic context of changing institutional environment can be improved substantially. It also reveals the key factors determining the process of decision making, thereby providing information for the facilitation and management of change processes.

The modelling of the selection between the rejection and adoption behaviour can be approached with Esser (2002)'s model of rational choice theory. The model assumes that individuals maximise their expected utilities by optimising the attainment of several goals or preferences through selecting a certain action. This requires the identification of at least three variables: First, the alternative actions to be considered; second, the subjective value of goal attainment attached by the individuals to each alternative action; and, third, the subjective expectation that the value will be realised if they choose the action. However, the quantification of such variables poses a daunting task since the values to be compared are of different nature, e.g. income, risk, conformity with social norms and values, or observance of habit.

A possibility of ordering the strength of influences is offered by theory of planned behaviour advanced by Ajzen (2005). Based on a previously conducted formative study TPB employs a quantitative questionnaire to measure individuals' subjective valuation of factors influencing their behaviour which are categorised into the so-called behavioural, normative, and control belief. These subjective beliefs or perception are measured mostly based on an ordinal scale and analysed using, among others, multiple regressions.

11.2.3 Lessons learnt in applying the research framework

The application of methodological individualism as the analytical framework of the research was able to produce convincing causal links between the objective conditions of the interaction systems – the VC governance – and their performance or outcome – the VC upgrading. It provided a thorough understanding why VC operators opted for certain action although they had other options which were more profitable or beneficial when viewed from an outsider's perspective: For example, why cooperative leaders did not attempt to establish intensive co-operation with DPIs although they recognised the strategic benefits of assistances provided by DPIs; or, why dairy farmers did not the exploit the opportunity to obtain higher milk income

through intensifying the feeding management. The Macro-Micro Model revealed the subjective perception, preferences, and orientations of the VC operators in relation to the action they selected.

However, the investigation into the subjective definition of the situation by VC operators was one of the most challenging issues in employing the analytical framework. While the objective situation of the interaction system and the action of individuals were more visible, concrete, evident, and thus relatively easier to observe; the perception of individuals were more hidden, abstract, concealed and thus more difficult to identify. The subjective perception of individuals was accessed in two ways: First, directly through the statements made by individuals; and, second, indirectly through inferring from the objective situations and the actions taken by individuals – an interpretative approach. The latter was much more demanding and required intensive analysis, contemplation, and confirmation as the subjective perceptions had to be able to present a logical bridge between the objective situation and selected action.

The inquiry into individual perception was further complicated by the limitation of data collection methods. Focus group discussion (FGD) and group observation was an appropriate and resource-efficient method to collect information on collective level. Nevertheless, when interview questions went into more sensitive aspects such as personal considerations in opting for certain action, socially desired behaviour, or information that could create negative impression; respondents gave superficial and sometimes dishonest responses. For example, when dairy farmers were asked, in the presence of cooperative staff, about what they needed to improve their farm, they tended to give positive answers, e.g. that their performance had been increasing lately or that the cooperative had provided them with adequate supports. Similarly, in formal meetings cooperative leaders were not willing to disclose information about the actual constraints and problems faced by the cooperative, because it could hurt their image as cooperative leader. They preferred to give the so-called “normative answers”, i.e. answers about how situations should be improved or what action should be taken.

Only after a certain degree of trust was established and the confidentiality of the information was guaranteed, interviewees were willing to disclose more sensitive information. Moreover, informal and casual interview setting could produce more reliable information than formal and tightly structured one. In the lesser-performing interaction system some of the interviews with the dairy farmers were conducted in the local language Javanese. Astonishingly, the

dairy farmers could unrestrainedly express their situations, arguments, opinions, worries, and expectations, thereby providing more resourceful, and sometimes different, information. This indicated that first, language could be a limiting factor in expressing information; and, second, the usage of local language created a better emotional bond and thus trust to the interviewees.

Data about regulative aspect was easier to collect because some of them were explicitly formulated or written down. Information on normative aspect was also quite easy to access since they were explicitly or frequently mentioned during interviews and observations. The information about cultural-cognitive aspect was, however, the most difficult to acquire because it was perceived as something natural, taken for granted and not consciously thought of. Also, the borderline between the subjective perception and objectified meanings, orientation, and habit was not so clear. In this context, the knowledge of external experts provided resourceful information.

11.3 Relevance und recommendation for development cooperation

In the field of development cooperation VC approach has been widely applied by diverse development agencies to spurt the economic growth in developing countries. Apart from promoting economic growth the chief end of its application is to contribute to poverty alleviation as emanated in the Millennium Development Goals. In supporting pro-poor economic growth VC promotion cannot thus be disentangled from the rural areas, because three quarter of the world's poor dwells in rural areas as farmers and landless labourer (World Bank 2007). However, as concluded by Altenburg (2006b), hitherto academic researches on VC governance have not yet been helpful for policy-makers in formulating pro-poor VC promotion strategy, because clear causal relationships between VC governance and upgrading was not yet identified and supported by empirical evidences. In particular there is a lack of clarification of the risks and opportunities as well as the optimal integration of poor people in developing countries without sacrificing long-term competitiveness of the value chain.

Against these backgrounds this empirical case study contributed further understandings of:

- The integration of poor rural producers, including their cooperatives which coordinated and organised the collective actions of rural producers, into the national and international VC.

- The governance structure – from an institutional perspective – of the interaction systems between the VC operators, including the objective factors both inhibiting and supporting further development of rural producers and cooperatives in the VC.
- The subjective perception, preference, and orientation of rural producers and cooperatives toward the opportunities and risks of upgrading their activities which resulted in their decision whether to engage in or to reject upgrading activities.
- The strategies – which incorporated socio-cultural factors – implemented to upgrade rural producers and cooperatives and their impacts on the performance.

Strategies to promote economic growth for poor people should carefully take into consideration the institutional aspects of the system in which poor people and their economic activities are embedded. First, the examination of the institutional framework and its influences on the behaviour of poor people in it provides correct and profound understanding why the poverty situation has come about in the first place. Second, based on the understanding, more careful and precise predictions can be made about how the individual behaviour would change if particular part of the system is altered and how the behavioural changes could lead to an improved situation for the poor. This allows the formulation of an effective intervention strategy while minimising the negative, sometimes unpredicted, impacts of the intervention. Third, by both addressing and utilising institutional aspects in the intervention strategy, the likelihood that the progressive changes are sustainable is higher than by conducting sporadic intervention activities. This implies the necessity to follow a systemic approach.

11.3.1 Collective action: Integration of smallholders into the value chain

This study also provided an example how poor and smallholder producers can be integrated into the value chain and be upgraded to higher performance, namely through organised collective action. Organised collective action – in this case in the form of cooperative, but can also be in other forms like formal producer association or informal producer group – bundles up the economic activity of smallholders to reach a considerable economic importance⁴, making it more attractive for larger companies. Although, there are different alternatives of integrat-

⁴ Cf. Morris (2001)

ing smallholders into the value chain, e.g. through sub-contracting, outgrower schemes, contract farming, or intermediary traders acting between smallholders and larger companies; organised collective action is more beneficial for smallholders. First, it can capture the value-added of economic activities⁵ performed by other VC operators, for example the activities of collecting, storing, and transportation by intermediary traders. Second, it can increase the bargaining position of smallholders against the buyer of their product and also the seller of input materials. Third, it can provide services required by smallholders collectively, thereby reducing the cost of service provision. Fourth, it can create higher degree of organisation, coordination, and flexibility among smallholders, enabling them to better cope with changing (market) situations.

The establishment and management of collective action, however, is not a simple, but rather daunting task. In low-trust environment the collaboration among smallholders is unlikely and difficult to initiate. Smallholders are usually reluctant to allocate their limited resource to engage in cooperative activity, e.g. gathering start capital for collective purchase of raw material, before any concrete benefit of the cooperation is visible. Once established, collective action requires competent and skilful personnel for leading the organisation processes and managing the collective services of administration, marketing, purchase, transportation, and so forth. The tendency to employ personnel among smallholders themselves who are not equipped with necessary skill and competency frequently results in low professional performance. Additional to the problem of skills and competences, individuals appointed as the leader or manager of the collective action may exploit the opportunity of misusing their position to pursue their own interests, thereby causing negative impacts to the collective action. Hence, the role of individuals in managing and leading position has great significance in producing successful outcome of collective action.

11.3.2 Strategic role and function of leaders

⁵ The term ‘value-added’ here follows the practical definition used in the economic analysis of value chain as described in Springer-Heinze (2007c), namely value-added = total sales value – value of intermediate or bought-in goods.

In the real world changing a system is not an easy task; particularly as development agencies have limited role as external facilitator. Internal change agents are required to stimulate progressive changes from within, so that the impacts are more sustainable. This corresponds with the research results that highlighted the strategic role and functions of transparent and committed leaders. Also, many empirical studies⁶ in development cooperation acknowledged the significance of such leaders – frequently termed ‘champions’ – in development processes. Champions are more open and eager toward new, positive changes as well as exhibit strong sense of ownership for and commitment to the endeavour to improve the existing condition. As they are usually equipped with more resources and thus influence, they can be the first to introduce changes, support and stimulate others. Additionally, they often have better access to policy-making which can alter the system. Thus, the identification of leaders or champions in the system and the subsequent cooperation with them provides a better alternative to induce structural changes in the system.

Nevertheless, as this empirical study already demonstrated, not all leaders were following altruistic motives in improving the well-being of the people they lead; some were fraught with vested self-interests. Combined with weak law enforcement, such impaired situation may necessitate the introduction of particular changes into the system making the pursuit of self-interests through malfeasant actions sub-optimal. These changes can be in both positive, i.e. encouraging non-opportunistic behaviour, and negative sense, i.e. discouraging opportunistic behaviour. For the first, an alluring incentive system rewarding non-opportunistic behaviour can be crafted based on careful identification of the interests or utility function of the leaders; a system where the personal utility function of the leaders is in accordance with that of the collectivity. Such incentive system can be a mixture of material interest (e.g. through more attractive remuneration system or performance-based financial bonus), ideal interest of reputation (e.g. public acknowledgement of improved performance), influence (e.g. social support from those benefiting from the improved performance), and others. For the latter, resort to regulative (e.g. coercive power of regulation) and normative aspect (e.g. creating social role

⁶ Cf. FAO (2009a); Kula et al. (2006); Morris et al. (2003); Morris (2001); and others

of good leader in conjunction with raising the collectivity's awareness and responsibility of social pressure) may be taken to countervail malfeasant behaviour.

11.3.3 Extending the conceptual framework of value chain analysis

Based on the research results, the conceptual framework of VC analysis can thus be extended to include wider socio-cultural aspects. While it is acknowledged that there is no such one-size-fits-all model to perform extended analysis of VC governance, there are at least important socio-cultural issues to be investigated into in order to achieve more comprehensive understanding of the prevailing VC governance. The following are two groups of issues to be clarified, additional to those standard issues in VC approach⁷. The first group concerns the characteristic of the relation or linkage both between different categories of VC operators and within one category of VC operators:

- i. **Social relation:** Is the relation limited to business / commercial only? If not, does it exhibit egalitarian or more hierarchical relation, such as in paternalistic, familial / kinship, quasi-feudal, or patron-client relation?
- ii. **Social leader:** Are there any VC operators or certain individuals (or even organisations) outside, yet influential in, the VC possessing higher economic, social, religious, or political importance and thus power? Do their interests or utility function support or stand in conflict with the further development of the VC?
- iii. **Trust and malfeasance:** Do VC operators trust each other and thus are open toward co-operation? If not, why? Do opportunism, weak law enforcement, and impunity hinder trust building or is mistrust caused by socio-cultural factors?
- iv. **Collective action:** Do VC operators in the same category work individually or collectively? Are they aware of the benefits of collective action? Is there any negative impact for collaboration?

The second group concerns the wider institutional aspect of the VC in which the VC operators are embedded:

⁷ Cf. Springer-Heinze (2007a); Kula et al. (February 2006); Kaplinsky et al. (2001); and others

- v. **Historical aspect:** How has the economic activity in the VC (the profession) come about? Is it related with other professions? Is it perceived to be positive or negative by the respective VC operator and the wider community?
- vi. **Social values and norms:** Do the behaviour – in particular the economic one – of VC operators follow any social value, norm, or role in the society? Are these hindering or can these be of positive use for further development of the VC?
- vii. **Orientation:** Is the orientation of VC operators commercial, semi-commercial, or traditional / subsistence? Does their activity in the VC serve as the primary or rather supplementary income (as it in the case of livelihood strategy: using spare time for working at another place, using harvest residue to create additional income, etc.)?
- viii. **Habit and common practice:** Is the economic activity in the VC connected to certain habit, e.g. other household, social, cultural, or religious activities? Do VC operators follow certain common practice or pattern of behaviour in the society?

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Appendix 1: The Miles and Huberman Framework for Qualitative Data Analysis

The Miles and Huberman framework for qualitative data analysis (Punch 2005, pp. 197-202, 286-288; Miles et al. 1994) consists of three main components: data reduction, data display, as well as drawing and verifying conclusions. These three activities are concurrent and interacting or interwoven throughout the data analysis:

- i. **Data reduction** has the objective to reduce data without significant loss of information and - particularly in qualitative analysis - without stripping the context from the data. In the early stages of data analysis it is done by editing, segmenting, and summarising the data. In the middle stages it happens through coding and memoing; whereas in the later stages it is performed through conceptualising and explaining - a way of developing abstract concepts.
- ii. **Data display** organises, compresses, and assembles information through charts, causal models, mind-mapping, etc. With the phrase 'You know what you display' Miles et al. (1994, p. 11) accentuated the importance of visualising data since it helps create better understandings of information and thus is essential at all stages of the data analysis.
- iii. **Drawing and verifying conclusions** happens more or less concurrently with data reduction and analysis. Conclusions made in the early stages – which may be vague – are still tentative and sharpened during the analysis process.

The two first components are operated through coding and memoing. Coding is the process of putting tags, names, or labels against pieces of data. The point of assigning labels is to attach meaning to the pieces of data. It also serves the functions of indexing the data and providing a basis for storage and retrieval. Coding both begins the analysis and continues at different levels throughout the analysis. In the early phase of the analysis descriptive codes – also called *in vivo* codes in grounded theory coding – are often in use for summarising segments of data; whereas in the later phase inferential or pattern codes are used for bringing together less abstract, more descriptive codes into a more abstract, higher-order concept. Memoing means writing-up of ideas and their relationships that come up during coding. It captures the researcher's momentary ideation based on data with probably a little conceptual explanation. Memoing links coding with the development of propositions and thus requires creativity.

The last component, drawing and verifying conclusions, has the objective to integrate previous stages into a meaningful and coherent picture. This operation involves a series of alternating inductive and deductive steps, whereby data-driven inductive hypothesis generation is followed by deductive hypothesis examination for the purpose of verification. It is the most difficult to describe since it encompasses numerous different analytical processes, which happen simultaneously rather than sequentially, and which cut across and combine with each other. To facilitate this difficult operation Miles et al. (1994) suggested two lists of tactics.

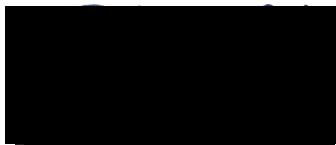
The first list contains 13 tactics for generating meaning from data (Miles et al. 1994, pp. 245–262): noting patterns and themes, seeing plausibility, clustering, making metaphors, counting, making contrasts or comparisons, partitioning variables, subsuming particulars into the general, factoring, noting relations between variables, finding intervening variables, building logical chain of evidence, and making conceptual / theoretical coherence.

The second list records the tactics for testing or confirming findings (Miles et al. 1994, pp. 262–277): checking for representativeness, checking for researcher effects, triangulating, weighting the evidence, checking the meaning of outliers, using extreme cases, following up surprises, looking for negative evidence, making if-then tests, ruling out spurious relations, replicating a finding, checking out rival explanations, and getting feedback from informants.

Eidesstattliche Erklärung

Ich erkläre hiermit an Eides statt, dass ich die vorliegende Arbeit selbstständig und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe. Die aus fremden Quellen direkt oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht. Die Arbeit wurde bisher in gleicher oder ähnlicher Form keiner anderen Prüfungsbehörde vorgelegt und auch nicht veröffentlicht.

Berlin, den 28. Mai 2010

A solid black rectangular box used to redact the signature of the author.

Daniel Setiawan Nugraha